

TM 1-208

WAR DEPARTMENT TECHNICAL MANUAL

1105 1-208

AIR NAVIGATION TABLES

WAR DEPARTMENT • 1 AUGUST 1944

WAR DEPARTMENT TECHNICAL MANUAL
TM 1-208

This manual supersedes TM 1-208, 5 June 1942, including C 1, 17 October 1942

AIR NAVIGATION
TABLES



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For explanation of symbols, see FM 21-6.

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Table I. NATURAL TRIGONOMETRIC FUNCTIONS¹

Table of natural values of trigonometric functions. Table I contains the numerical values of the sines, cosines, tangents, and cotangents of angles from 0° to 90° at intervals of $1'$. In the case of an angle in the range from 0° to 45° , the number of degrees in the angle and the names of the functions are found at the top of the page and the left-hand minute column applies; in the case of angles in the range from 45° to 90° , the number of degrees in the angle and the names of the functions are found at the bottom of the page and the right-hand minute column applies. Interpolation must be carried out without the aid of difference columns or tables of proportional parts.

The following examples illustrate the method of using the tables.

Example 1. Find $\sin 68^\circ 28'$.

Solution. We first find the page at the bottom of which 68° appears and then find the row of the 68° block containing $28'$ in the right-hand minute column. In this row and in the column having sin at its foot we find 020 to which we must prefix 0.93 to obtain $\sin 68^\circ 28' = 0.93020$.

Example 2. Find $\sin 38^\circ 38' 27''$.

Solution. Using the tables and computing differences, we find the values exhibited in the following form:

$$\left. \begin{array}{l} \sin 38^\circ 38' 00'' \\ \sin 38^\circ 38' 27'' \\ \sin 38^\circ 39' 00'' \end{array} \right\} \begin{array}{l} 27'' \\ 60'' \\ 60'' \end{array} \left. \begin{array}{l} = 0.62433 \\ = ? \\ = 0.62456 \end{array} \right\} x \left. \begin{array}{l} \\ \\ \end{array} \right\} 23$$

Hence

$$\frac{x}{23} = \frac{27}{60}, \text{ or } x = \left(\frac{27}{60}\right)23 = 10 \text{ (nearly).}$$

Therefore

$$\sin 38^\circ 38' 27'' = 0.62433 + 0.00010 = 0.62443. \quad \text{Ans.}$$

Example 3. If $\cot \theta = 0.37806$, find θ .

Solution. Using the tables and computing differences, we find the values exhibited in the following form:

$$\left. \begin{array}{l} \cot 69^\circ 17' 00'' \\ \cot ? \\ \cot 69^\circ 18' 00'' \end{array} \right\} x \left. \begin{array}{l} \\ 60 \\ \end{array} \right\} \left. \begin{array}{l} = 0.37820 \\ = 0.37806 \\ = 0.37787 \end{array} \right\} 14 \left. \begin{array}{l} \\ \\ \end{array} \right\} 33$$

Hence

$$\frac{x}{60} = \frac{14}{33}, \text{ or } x = \frac{14}{33}(60) = 25'' \text{ (nearly), and } \theta = 69^\circ 17' 25''. \quad \text{Ans.}$$

Since $\cot \theta$ is positive in the third quadrant, we may also write an answer $180^\circ + 69^\circ 17' 25'' = 249^\circ 17' 25''$.

¹ The following table of natural trigonometric functions and the explanation thereto have been prepared and copyrighted by Lyman M. Kells, Willis F. Kern, and James R. Bland, who have supplied them to the Army Air Forces for use in this publication. Neither the table nor any new feature embodied therein may be reproduced in any form without the permission of the copyright owners.

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Table I. Natural Trigonometric Functions

0°

	sin	tan	cot	cos	
0	.00000	.00000	∞	1.0000	60
1	.029	.029	3437.7	.000	59
2	.058	.058	1718.9	.000	58
3	.087	.087	1145.9	.000	57
4	.116	.116	859.44	.000	56
5	.145	.145	687.55	.000	55
6	.175	.175	572.96	.000	54
7	.204	.204	491.11	.000	53
8	.00233	.00233	429.72	.000	52
9	.262	.262	381.97	.000	51
10	.291	.291	343.77	1.0000	50
11	.320	.320	312.52	.99999	49
12	.349	.349	286.48	.999	48
13	.378	.378	264.44	.999	47
14	.407	.407	245.55	.999	46
15	.436	.436	229.18	.999	45
16	.465	.465	214.86	.999	44
17	.00495	.00495	202.22	.999	43
18	.524	.524	190.98	.999	42
19	.553	.553	180.93	.998	41
20	.582	.582	171.89	.99998	40
21	.611	.611	163.70	.998	39
22	.640	.640	156.26	.998	38
23	.669	.669	149.47	.998	37
24	.698	.698	143.24	.998	36
25	.00727	.00727	137.51	.997	35
26	.756	.756	132.22	.997	34
27	.785	.785	127.32	.997	33
28	.814	.815	122.77	.997	32
29	.844	.844	118.54	.996	31
30	.873	.873	114.59	.99996	30
31	.902	.902	110.89	.996	29
32	.931	.931	107.43	.996	28
33	.960	.960	104.17	.995	27
34	.00989	.00989	101.11	.995	26
35	.01018	.01018	98.218	.995	25
36	.047	.047	95.489	.995	24
37	.076	.076	92.908	.994	23
38	.105	.105	90.463	.994	22
39	.134	.135	88.144	.994	21
40	.164	.164	85.940	.99993	20
41	.193	.193	83.844	.993	19
42	.222	.222	81.847	.993	18
43	.01251	.01251	79.943	.992	17
44	.280	.01280	78.126	.992	16
45	.309	.309	76.390	.991	15
46	.338	.338	74.729	.991	14
47	.367	.367	73.139	.991	13
48	.396	.396	71.615	.990	12
49	.425	.425	70.153	.990	11
50	.454	.455	68.750	.99989	10
51	.483	.484	67.402	.989	9
52	.01513	.01513	66.105	.989	8
53	.542	.542	64.858	.988	7
54	.571	.571	63.657	.988	6
55	.600	.600	62.499	.987	5
56	.629	.629	61.383	.987	4
57	.658	.658	60.306	.986	3
58	.687	.687	59.266	.986	2
59	.716	.716	58.261	.985	1
60	.01745	.01746	57.290	.99985	0
	cos	cot	tan	sin	

89°

1°

	sin	tan	cot	cos	
0	.01745	.01746	57.290	.99985	60
1	.774	.775	56.351	.984	59
2	.803	.804	55.442	.984	58
3	.832	.833	54.561	.983	57
4	.862	.862	53.709	.983	56
5	.891	.891	52.882	.982	55
6	.920	.920	52.081	.982	54
7	.949	.949	51.303	.981	53
8	.01978	.01978	50.549	.980	52
9	.02007	.02007	49.816	.980	51
10	.036	.036	49.104	.99979	50
11	.065	.066	48.412	.979	49
12	.094	.095	47.740	.978	48
13	.123	.124	47.085	.977	47
14	.152	.153	46.449	.977	46
15	.181	.182	45.829	.976	45
16	.211	.211	45.226	.976	44
17	.240	.02240	44.639	.975	43
18	.269	.269	44.066	.974	42
19	.298	.298	43.508	.974	41
20	.02327	.328	42.964	.99973	40
21	.356	.357	42.433	.972	39
22	.385	.386	41.916	.972	38
23	.414	.415	41.411	.971	37
24	.443	.444	40.917	.970	36
25	.472	.473	40.436	.969	35
26	.501	.02502	39.965	.969	34
27	.530	.531	39.506	.968	33
28	.560	.560	39.057	.967	32
29	.589	.589	38.618	.966	31
30	.02618	.619	38.188	.99966	30
31	.647	.648	37.769	.965	29
32	.676	.677	37.358	.964	28
33	.705	.706	36.956	.963	27
34	.734	.735	36.563	.963	26
35	.763	.02764	36.178	.962	25
36	.792	.793	35.801	.961	24
37	.02821	.822	35.431	.960	23
38	.850	.851	35.070	.959	22
39	.879	.881	34.715	.959	21
40	.908	.910	34.368	.99958	20
41	.938	.939	34.027	.957	19
42	.967	.968	33.694	.956	18
43	.02996	.02997	33.366	.955	17
44	.03025	.03026	33.045	.954	16
45	.054	.055	32.730	.953	15
46	.083	.084	32.421	.952	14
47	.112	.114	32.118	.952	13
48	.141	.143	31.821	.951	12
49	.170	.172	31.528	.950	11
50	.199	.201	31.242	.99949	10
51	.228	.230	30.960	.948	9
52	.03257	.03259	30.683	.947	8
53	.286	.288	30.412	.946	7
54	.316	.317	30.145	.945	6
55	.345	.346	29.882	.944	5
56	.374	.376	29.624	.943	4
57	.403	.405	29.371	.942	3
58	.432	.434	29.122	.941	2
59	.461	.463	28.877	.940	1
60	.03490	.03492	28.636	.99939	0
	cos	cot	tan	sin	

88°

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Table I. Natural Trigonometric Functions—Continued

2°						3°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.03490	.03492	28.636	.99939	60	0	.05234	.05241	19.081	.99863	60
1	519	521	.399	938	59	1	263	270	18.976	861	59
2	548	550	28.166	937	58	2	292	299	.871	860	58
3	577	579	27.937	936	57	3	321	328	.768	858	57
4	606	609	.712	935	56	4	350	357	.666	857	56
5	635	638	.490	934	55	5	379	387	.564	855	55
6	664	667	.271	933	54	6	408	416	.464	854	54
7	693	696	27.057	932	53	7	437	445	.366	852	53
8	723	.03725	26.845	931	52	8	466	474	.268	851	52
9	.03752	754	.637	930	51	9	.05495	.05503	.171	849	51
10	781	783	.432	.99929	50	10	524	533	18.075	.99847	50
11	810	812	.230	927	49	11	553	562	17.980	846	49
12	839	842	26.031	926	48	12	582	591	.886	844	48
13	868	871	25.835	925	47	13	611	620	.793	842	47
14	897	900	.642	924	46	14	640	649	.702	841	46
15	926	929	.452	923	45	15	669	678	.611	839	45
16	955	958	.264	922	44	16	698	708	.521	838	44
17	.03984	.03987	25.080	921	43	17	.05727	737	.431	836	43
18	.04013	.04016	24.898	919	42	18	756	.05766	.343	834	42
19	042	046	.719	918	41	19	785	795	.256	833	41
20	071	075	.542	.99917	40	20	814	824	.169	.99831	40
21	100	104	.368	916	39	21	844	854	17.084	829	39
22	129	133	.196	915	38	22	873	883	16.999	827	38
23	159	162	24.026	913	37	23	902	912	.915	826	37
24	188	191	23.859	912	36	24	931	941	.832	824	36
25	217	220	.695	911	35	25	960	970	.750	822	35
26	246	.04250	.532	910	34	26	.05989	.05999	.668	821	34
27	.04275	279	.372	909	33	27	.06018	.06029	.587	819	33
28	304	308	.214	907	32	28	047	058	16.507	817	32
29	333	337	23.058	906	31	29	076	087	.428	815	31
30	362	366	22.904	.99905	30	30	105	116	.350	.99813	30
31	391	395	.752	904	29	31	134	145	.272	812	29
32	420	424	.602	902	28	32	163	175	.195	810	28
33	449	454	.454	901	27	33	192	204	.119	808	27
34	478	.04483	.308	900	26	34	221	233	16.043	806	26
35	.04507	512	.164	898	25	35	.06250	262	15.969	804	25
36	536	541	22.022	897	24	36	279	.06291	.895	803	24
37	565	570	21.881	896	23	37	308	321	.821	801	23
38	594	599	.743	894	22	38	337	350	.748	799	22
39	623	628	.606	893	21	39	366	379	.676	797	21
40	653	658	.470	.99892	20	40	395	408	.605	.99795	20
41	682	687	.337	890	19	41	424	438	.534	793	19
42	.04711	.04716	.205	889	18	42	453	467	15.464	792	18
43	740	745	21.075	888	17	43	.06482	496	.394	790	17
44	769	774	20.946	886	16	44	511	.06525	.325	788	16
45	798	803	.819	885	15	45	540	554	.257	786	15
46	827	833	.693	883	14	46	569	584	.189	784	14
47	856	862	.569	882	13	47	598	613	.122	782	13
48	885	891	.446	881	12	48	627	642	15.056	780	12
49	914	920	.325	879	11	49	656	671	14.990	778	11
50	943	949	.206	.99878	10	50	685	700	.924	.99776	10
51	.04972	.04978	20.087	876	9	51	.06714	730	.860	774	9
52	.05001	.05007	19.970	875	8	52	743	.06759	.795	772	8
53	030	037	.855	873	7	53	773	788	.732	770	7
54	059	066	.740	872	6	54	802	817	.669	768	6
55	088	095	.627	870	5	55	831	847	.606	766	5
56	117	124	.516	869	4	56	860	876	.544	764	4
57	146	153	.405	867	3	57	889	905	.482	762	3
58	175	182	.296	866	2	58	918	934	.421	760	2
59	205	212	.188	864	1	59	947	963	.361	758	1
60	.05234	.05241	19.081	.99863	0	60	.06976	.06993	14.301	.99756	0
87°						86°					
	cos	cot	tan	sin			cos	cot	tan	sin	

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Table I. Natural Trigonometric Functions—Continued

4°

	sin	tan	cot	cos	
0	.06976	.06993	14.301	.99756	60
1	.07005	.07022	.241	.754	59
2	.034	.051	.182	.752	58
3	.063	.080	.124	.750	57
4	.092	.110	.065	.748	56
5	.121	.139	14.008	.746	55
6	.150	.168	13.951	.744	54
7	.179	.197	.894	.742	53
8	.208	.227	.838	.740	52
9	.237	.07256	.782	.738	51
10	.07266	.285	.727	.99736	50
11	.295	.314	.672	.734	49
12	.324	.344	.617	.731	48
13	.353	.373	.563	.729	47
14	.382	.402	13.510	.727	46
15	.411	.431	.457	.725	45
16	.440	.461	.404	.723	44
17	.469	.490	.352	.721	43
18	.07498	.07519	.300	.719	42
19	.527	.548	.248	.716	41
20	.556	.578	.197	.99714	40
21	.585	.607	.146	.712	39
22	.614	.636	.096	.710	38
23	.643	.665	13.046	.708	37
24	.672	.695	12.996	.705	36
25	.701	.724	.947	.703	35
26	.07730	.07753	.898	.701	34
27	.759	.782	.850	.699	33
28	.788	.812	.801	.696	32
29	.817	.841	.754	.694	31
30	.846	.870	.706	.99692	30
31	.875	.899	.659	.689	29
32	.904	.929	12.612	.687	28
33	.933	.958	.566	.685	27
34	.962	.07987	.520	.683	26
35	.07991	.08017	.474	.680	25
36	.08020	.046	.429	.678	24
37	.049	.075	.384	.676	23
38	.078	.104	12.339	.673	22
39	.107	.134	.295	.671	21
40	.136	.163	.251	.99668	20
41	.165	.192	.207	.666	19
42	.194	.221	.163	.664	18
43	.223	.08251	.120	.661	17
44	.08252	.280	.077	.659	16
45	.281	.309	12.035	.657	15
46	.310	.339	11.992	.654	14
47	.339	.368	.950	.652	13
48	.368	.397	.909	.649	12
49	.397	.427	.867	.647	11
50	.426	.456	.826	.99644	10
51	.455	.485	.785	.642	9
52	.08484	.08514	.745	.639	8
53	.513	.544	.705	.637	7
54	.542	.573	11.664	.635	6
55	.571	.602	.625	.632	5
56	.600	.632	.585	.630	4
57	.629	.661	.546	.627	3
58	.658	.690	.507	.625	2
59	.687	.720	.468	.622	1
60	.08716	.08749	11.430	.99619	0
	cos	cot	tan	sin	

85°

5°

	sin	tan	cot	cos	
0	.08716	.08749	11.430	.99619	60
1	.745	.778	.392	.617	59
2	.774	.807	.354	.614	58
3	.803	.837	.316	.612	57
4	.831	.866	.279	.609	56
5	.860	.895	.242	.607	55
6	.889	.925	.205	.604	54
7	.918	.954	.168	.602	53
8	.947	.08983	.132	.599	52
9	.08976	.09013	.095	.596	51
10	.09005	.042	.059	.99594	50
11	.034	.071	11.024	.591	49
12	.063	.101	10.988	.588	48
13	.092	.130	.953	.586	47
14	.121	.159	.918	.583	46
15	.150	.189	.883	.580	45
16	.179	.218	.848	.578	44
17	.208	.09247	.814	.575	43
18	.09237	.277	.780	.572	42
19	.266	.306	.746	.570	41
20	.295	.335	.712	.99567	40
21	.324	.365	.678	.564	39
22	.353	.394	10.645	.562	38
23	.382	.423	.612	.559	37
24	.411	.453	.579	.556	36
25	.440	.09482	.546	.553	35
26	.09469	.511	.514	.551	34
27	.498	.541	.481	.548	33
28	.527	.570	.449	.545	32
29	.556	.600	.417	.542	31
30	.585	.629	.385	.99540	30
31	.614	.658	.354	.537	29
32	.642	.688	10.322	.534	28
33	.671	.09717	.291	.531	27
34	.700	.746	.260	.528	26
35	.09729	.776	.229	.526	25
36	.758	.805	.199	.523	24
37	.787	.834	.168	.520	23
38	.816	.864	.138	.517	22
39	.845	.893	.108	.514	21
40	.874	.923	.078	.99511	20
41	.903	.952	.048	.508	19
42	.932	.09981	10.019	.506	18
43	.961	.10011	9.9893	.503	17
44	.09990	.040	.9601	.500	16
45	.10019	.069	.9310	.497	15
46	.048	.099	.9021	.494	14
47	.077	.128	.8734	.491	13
48	.106	.158	.8448	.488	12
49	.135	.187	.8164	.485	11
50	.164	.216	.7882	.99482	10
51	.192	.10246	.7601	.479	9
52	.221	.275	9.7322	.476	8
53	.10250	.305	.7044	.473	7
54	.279	.334	.6768	.470	6
55	.308	.363	.6493	.467	5
56	.337	.393	.6220	.464	4
57	.366	.422	.5949	.461	3
58	.395	.452	.5679	.458	2
59	.424	.481	.5411	.455	1
60	.10453	.10510	9.5144	.99452	0
	cos	cot	tan	sin	

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AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

6°						7°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.10453	.10510	9.5144	.99452	60	0	.12187	.12278	8.1443	.99255	60
1	482	540	.4878	449	59	1	216	308	.1248	251	59
2	511	569	.4614	446	58	2	245	338	.1054	248	58
3	540	599	.4352	443	57	3	274	367	.0860	244	57
4	569	628	.4090	440	56	4	302	397	.0667	240	56
5	597	657	.3831	437	55	5	331	426	.0476	237	55
6	626	687	.3572	434	54	6	360	456	.0285	233	54
7	655	716	.3315	431	53	7	389	485	8.0095	230	53
8	684	.10746	.3060	428	52	8	418	.12515	7.9906	226	52
9	.10713	775	.2806	424	51	9	.12447	544	.9718	222	51
10	742	805	9.2553	.99421	50	10	476	574	.9530	.99219	50
11	771	834	.2302	418	49	11	504	603	.9344	215	49
12	800	863	.2052	415	48	12	533	633	.9158	211	48
13	829	893	.1803	412	47	13	562	662	.8973	208	47
14	858	922	.1555	409	46	14	591	692	.8789	204	46
15	887	952	.1309	406	45	15	620	722	.8606	200	45
16	916	.10981	.1065	402	44	16	649	.12751	7.8424	197	44
17	945	.11011	.0821	399	43	17	678	781	.8243	193	43
18	.10973	040	.0579	396	42	18	.12706	810	.8062	189	42
19	.11002	070	.0338	393	41	19	735	840	.7882	186	41
20	031	099	9.0098	.99390	40	20	764	869	.7704	.99182	40
21	060	128	8.9860	386	39	21	793	899	.7525	178	39
22	089	158	.9623	383	38	22	822	929	.7348	175	38
23	118	187	.9387	380	37	23	851	958	.7171	171	37
24	147	217	.9152	377	36	24	880	.12988	.6996	167	36
25	176	.11246	.8919	374	35	25	908	.13017	7.6821	163	35
26	205	276	.8686	370	34	26	937	047	.6647	160	34
27	234	305	.8455	367	33	27	966	076	.6473	156	33
28	.11263	335	.8225	364	32	28	.12995	106	.6301	152	32
29	291	364	.7996	360	31	29	.13024	136	.6129	148	31
30	320	394	.7769	.99357	30	30	053	165	.5958	.99144	30
31	349	423	8.7542	354	29	31	081	195	.5787	141	29
32	378	452	.7317	351	28	32	110	224	.5618	137	28
33	407	.11482	.7093	347	27	33	139	.13254	.5449	133	27
34	436	511	.6870	344	26	34	168	284	7.5281	129	26
35	465	541	.6648	341	25	35	197	313	.5113	125	25
36	494	570	.6427	337	24	36	.13226	343	.4947	122	24
37	.11523	600	.6208	334	23	37	254	372	.4781	118	23
38	552	629	.5989	331	22	38	283	402	.4615	114	22
39	580	659	.5772	327	21	39	312	432	.4451	110	21
40	609	688	.5555	.99324	20	40	341	461	.4287	.99106	20
41	638	.11718	8.5340	320	19	41	370	.13491	.4124	102	19
42	667	747	.5126	317	18	42	399	521	.3962	098	18
43	696	777	.4913	314	17	43	427	550	7.3800	094	17
44	725	806	.4701	310	16	44	.13456	580	.3639	091	16
45	.11754	836	.4490	307	15	45	485	609	.3479	087	15
46	783	865	.4280	303	14	46	514	639	.3319	083	14
47	812	895	.4071	300	13	47	543	669	.3160	079	13
48	840	924	.3863	297	12	48	572	698	.3002	075	12
49	869	954	.3656	293	11	49	600	.13728	.2844	071	11
50	898	.11983	.3450	.99290	10	50	629	758	.2687	.99067	10
51	927	.12013	8.3245	286	9	51	658	787	7.2531	063	9
52	956	042	.3041	283	8	52	.13687	817	.2375	059	8
53	.11985	072	.2838	279	7	53	716	846	.2220	055	7
54	.12014	101	.2636	276	6	54	744	876	.2066	051	6
55	043	131	.2434	272	5	55	773	906	.1912	047	5
56	071	160	.2234	269	4	56	802	935	.1759	043	4
57	100	190	.2035	265	3	57	831	965	.1607	039	3
58	129	219	.1837	262	2	58	860	.13995	.1455	035	2
59	158	249	.1640	258	1	59	889	.14024	.1304	031	1
60	.12187	.12278	8.1443	.99255	0	60	.13917	.14054	7.1154	.99027	0
cos						cos					
cot						cot					
tan						tan					
sin						sin					
83°						82°					

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

8°

	sin	tan	cot	cos	
0	.13917	.14054	7.1154	.99027	60
1	.946	.084	.1004	.023	59
2	.13975	.113	.0855	.019	58
3	.14004	.143	.0706	.015	57
4	.033	.173	.0558	.011	56
5	.061	.202	.0410	.006	55
6	.090	.232	.0264	.99002	54
7	.119	.262	7.0117	.98998	53
8	.148	.14291	6.9972	.994	52
9	.177	.321	.9827	.990	51
10	.205	.351	.9682	.986	50
11	.14234	.381	.9538	.982	49
12	.263	.410	.9395	.978	48
13	.292	.440	.9252	.973	47
14	.320	.470	.9110	.969	46
15	.349	.499	.8969	.965	45
16	.378	.14529	.8828	.961	44
17	.407	.559	6.8687	.98957	43
18	.436	.588	.8548	.953	42
19	.464	.618	.8408	.948	41
20	.14493	.648	.8269	.944	40
21	.522	.678	.8131	.940	39
22	.551	.707	.7994	.936	38
23	.580	.737	.7856	.931	37
24	.608	.14767	.7720	.927	36
25	.637	.796	6.7584	.98923	35
26	.666	.826	.7448	.919	34
27	.695	.856	.7313	.914	33
28	.14723	.886	.7179	.910	32
29	.752	.915	.7045	.906	31
30	.781	.945	.6912	.902	30
31	.810	.14975	.6779	.897	29
32	.838	.15005	.6646	.893	28
33	.867	.034	.6514	.889	27
34	.896	.064	6.6383	.98884	26
35	.925	.094	.6252	.880	25
36	.954	.124	.6122	.876	24
37	.14982	.153	.5992	.871	23
38	.15011	.183	.5863	.867	22
39	.040	.213	.5734	.863	21
40	.069	.243	.5606	.858	20
41	.097	.15272	.5478	.854	19
42	.126	.302	.5350	.849	18
43	.155	.332	6.5223	.98845	17
44	.184	.362	.5097	.841	16
45	.15212	.391	.4971	.836	15
46	.241	.421	.4846	.832	14
47	.270	.451	.4721	.827	13
48	.299	.481	.4596	.823	12
49	.327	.511	.4472	.818	11
50	.356	.15540	.4348	.814	10
51	.385	.570	.4225	.809	9
52	.15414	.600	6.4103	.98805	8
53	.442	.630	.3980	.800	7
54	.471	.660	.3859	.796	6
55	.500	.689	.3737	.791	5
56	.529	.719	.3617	.787	4
57	.557	.749	.3496	.782	3
58	.586	.779	.3376	.778	2
59	.615	.809	.3257	.773	1
60	.15643	.15838	6.3138	.98769	0
cos	cot	tan	sin		

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9°

	sin	tan	cot	cos	
0	.15643	.15838	6.3138	.98769	60
1	.672	.868	.3019	.764	59
2	.701	.898	.2901	.760	58
3	.730	.928	.2783	.755	57
4	.758	.958	.2666	.751	56
5	.787	.15988	.2549	.746	55
6	.15816	.16017	.2432	.741	54
7	.845	.047	.2316	.737	53
8	.873	.077	.2200	.732	52
9	.902	.107	6.2085	.728	51
10	.931	.137	.1970	.98723	50
11	.959	.167	.1856	.718	49
12	.15988	.196	.1742	.714	48
13	.16017	.226	.1628	.709	47
14	.046	.16256	.1515	.704	46
15	.074	.286	.1402	.700	45
16	.103	.316	.1290	.695	44
17	.132	.346	.1178	.690	43
18	.160	.376	6.1066	.686	42
19	.189	.405	.0955	.681	41
20	.218	.435	.0844	.98676	40
21	.246	.465	.0734	.671	39
22	.16275	.16495	.0624	.667	38
23	.304	.525	.0514	.662	37
24	.333	.555	.0405	.657	36
25	.361	.585	.0296	.652	35
26	.390	.615	.0188	.648	34
27	.419	.645	6.0080	.643	33
28	.447	.674	5.9972	.638	32
29	.476	.704	.9865	.633	31
30	.505	.16734	.9758	.98629	30
31	.16533	.764	.9651	.624	29
32	.562	.794	.9545	.619	28
33	.591	.824	.9439	.614	27
34	.620	.854	.9333	.609	26
35	.648	.884	.9228	.604	25
36	.677	.914	5.9124	.600	24
37	.706	.944	.9019	.595	23
38	.734	.16974	.8915	.590	22
39	.16763	.17004	.8811	.585	21
40	.792	.033	.8708	.98580	20
41	.820	.063	.8605	.575	19
42	.849	.093	.8502	.570	18
43	.878	.123	.8400	.565	17
44	.906	.153	5.8298	.561	16
45	.935	.183	.8197	.556	15
46	.964	.17213	.8095	.551	14
47	.16992	.243	.7994	.546	13
48	.17021	.273	.7894	.541	12
49	.050	.303	.7794	.536	11
50	.078	.333	.7694	.98531	10
51	.107	.363	.7594	.526	9
52	.136	.393	5.7495	.521	8
53	.164	.17423	.7396	.516	7
54	.17193	.453	.7297	.511	6
55	.222	.483	.7199	.506	5
56	.250	.513	.7101	.501	4
57	.279	.543	.7004	.496	3
58	.308	.573	.6906	.491	2
59	.336	.603	.6809	.486	1
60	.17365	.17633	5.6713	.98481	0
cos	cot	tan	sin		

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AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

10°

11°

	sin	tan	cot	cos	
0	.17365	.17633	5.6713	.98481	60
1	393	663	.6617	476	59
2	422	693	.6521	471	58
3	451	723	.6425	466	57
4	479	753	.6329	461	56
5	508	783	.6234	455	55
6	537	.17813	.6140	450	54
7	.17565	843	.6045	445	53
8	594	873	.5951	440	52
9	623	903	.5857	435	51
10	651	933	5.5764	.98430	50
11	680	963	.5671	425	49
12	708	.17993	.5578	420	48
13	737	.18023	.5485	414	47
14	766	053	.5393	409	46
15	.17794	083	.5301	404	45
16	823	113	.5209	399	44
17	852	143	.5118	394	43
18	880	173	.5026	389	42
19	909	203	.4936	383	41
20	937	233	5.4845	.98378	40
21	966	.18263	.4755	373	39
22	.17995	293	.4665	368	38
23	.18023	323	.4575	362	37
24	052	353	.4486	357	36
25	081	384	.4397	352	35
26	109	414	.4308	347	34
27	138	444	.4219	341	33
28	166	474	.4131	336	32
29	195	.18504	.4043	331	31
30	224	534	5.3955	.98325	30
31	252	564	.3868	320	29
32	.18281	594	.3781	315	28
33	309	624	.3694	310	27
34	338	654	.3607	304	26
35	367	684	.3521	299	25
36	395	714	.3435	294	24
37	424	.18745	.3349	288	23
38	452	775	.3263	283	22
39	481	805	.3178	277	21
40	.18509	835	5.3093	.98272	20
41	538	865	.3008	267	19
42	567	895	.2924	261	18
43	595	925	.2839	256	17
44	624	955	.2755	250	16
45	652	.18986	.2672	245	15
46	681	.19016	.2588	240	14
47	710	046	.2505	234	13
48	738	076	.2422	229	12
49	.18767	106	.2339	223	11
50	795	136	5.2257	.98218	10
51	824	166	.2174	212	9
52	852	197	.2092	207	8
53	881	.19227	.2011	201	7
54	910	257	.1929	196	6
55	938	287	.1848	190	5
56	967	317	.1767	185	4
57	.18995	347	.1686	179	3
58	.19024	378	.1606	174	2
59	052	408	.1526	168	1
60	.19081	.19438	5.1446	.98163	0
	cos	cot	tan	sin	

79°

	sin	tan	cot	cos	
0	.19081	.19438	5.1446	.98163	60
1	109	468	.1366	157	59
2	138	498	.1286	152	58
3	167	529	.1207	146	57
4	195	559	.1128	140	56
5	224	589	.1049	135	55
6	252	619	.0970	129	54
7	281	649	.0892	124	53
8	.19309	680	.0814	118	52
9	338	.19710	5.0736	.98112	51
10	366	740	.0658	107	50
11	395	770	.0581	101	49
12	423	801	.0504	096	48
13	452	831	.0427	090	47
14	481	861	.0350	084	46
15	509	891	.0273	079	45
16	.19538	921	.0197	073	44
17	566	952	.0121	067	43
18	595	.19982	5.0045	061	42
19	623	.20012	4.9969	.98056	41
20	652	042	.9894	050	40
21	680	073	.9819	044	39
22	709	103	.9744	039	38
23	737	133	.9669	033	37
24	.19766	164	.9594	027	36
25	794	194	.9520	021	35
26	823	.20224	.9446	016	34
27	851	254	4.9372	010	33
28	880	285	.9298	.98004	32
29	908	315	.9225	.97998	31
30	937	345	.9152	992	30
31	965	376	.9078	987	29
32	.19994	406	.9006	981	28
33	.20022	436	.8933	975	27
34	051	.20466	.8860	969	26
35	079	497	4.8788	963	25
36	108	527	.8716	958	24
37	136	557	.8644	.97952	23
38	165	588	.8573	946	22
39	193	618	.8501	940	21
40	222	648	.8430	934	20
41	250	679	.8359	928	19
42	.20279	709	.8288	922	18
43	307	.20739	.8218	916	17
44	336	770	4.8147	.97910	16
45	364	800	.8077	905	15
46	393	830	.8007	899	14
47	421	861	.7937	893	13
48	450	891	.7867	887	12
49	478	921	.7798	881	11
50	507	952	.7729	875	10
51	.20535	.20982	.7659	869	9
52	563	.21013	4.7591	.97863	8
53	592	043	.7522	857	7
54	620	073	.7453	851	6
55	649	104	.7385	845	5
56	677	134	.7317	839	4
57	706	164	.7249	833	3
58	734	195	.7181	827	2
59	763	225	.7114	821	1
60	.20791	.21256	4.7046	.97815	0
	cos	cot	tan	sin	

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ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

12°						13°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.20791	.21256	4.7046	.97815	60	0	.22495	.23087	4.3315	.97437	60
1	820	286	4.6979	809	59	1	523	117	257	430	59
2	848	316	912	803	58	2	552	148	200	424	58
3	877	347	845	797	57	3	580	179	143	417	57
4	905	377	779	791	56	4	608	209	086	411	56
5	933	408	712	784	55	5	637	240	4.3029	404	55
6	962	438	646	778	54	6	665	271	4.2972	398	54
7	.20990	469	580	772	53	7	693	23301	916	391	53
8	.21019	.21499	4.6514	766	52	8	.22722	332	859	384	52
9	047	529	448	760	51	9	750	363	803	378	51
10	076	560	382	.97754	50	10	778	393	747	.97371	50
11	104	590	317	748	49	11	807	424	691	365	49
12	132	621	252	742	48	12	835	455	635	358	48
13	161	651	187	735	47	13	863	485	580	351	47
14	189	682	122	729	46	14	892	516	4.2524	345	46
15	218	712	4.6057	723	45	15	920	.23547	468	338	45
16	.21246	.21743	4.5993	717	44	16	948	578	413	331	44
17	275	773	928	711	43	17	.22977	608	358	325	43
18	303	804	864	705	42	18	.23005	639	303	318	42
19	331	834	800	698	41	19	033	670	248	311	41
20	360	864	736	.97692	40	20	062	700	193	.97304	40
21	388	895	673	686	39	21	090	731	139	298	39
22	417	925	609	680	38	22	118	.23762	084	291	38
23	445	956	4.5546	673	37	23	146	793	4.2030	284	37
24	474	.21986	483	667	36	24	175	823	4.1976	278	36
25	.21502	.22017	420	661	35	25	203	854	922	271	35
26	530	047	357	655	34	26	231	885	868	264	34
27	559	078	294	648	33	27	.23260	916	814	257	33
28	587	108	232	642	32	28	288	946	760	251	32
29	616	139	169	636	31	29	316	.23977	706	244	31
30	644	169	107	.97630	30	30	345	.24008	653	.97237	30
31	672	200	4.5045	623	29	31	373	039	600	230	29
32	701	231	4.4983	617	28	32	401	069	547	223	28
33	729	.22261	922	611	27	33	429	100	4.1493	217	27
34	.21758	292	860	604	26	34	458	131	441	210	26
35	786	322	799	598	25	35	.23486	162	388	203	25
36	814	353	737	592	24	36	514	193	335	196	24
37	843	383	676	585	23	37	542	223	282	189	23
38	871	414	615	579	22	38	571	.24254	230	182	22
39	899	444	555	573	21	39	599	285	178	176	21
40	928	475	4.4494	.97566	20	40	627	316	126	.97169	20
41	956	.22505	434	560	19	41	656	347	074	162	19
42	.21985	536	373	553	18	42	684	377	4.1022	155	18
43	.22013	567	313	547	17	43	712	408	4.0970	148	17
44	041	597	253	541	16	44	.23740	439	918	141	16
45	070	628	194	534	15	45	769	.24470	867	134	15
46	098	658	134	528	14	46	797	501	815	127	14
47	126	689	075	521	13	47	825	532	764	120	13
48	155	719	4.4015	515	12	48	853	562	713	113	12
49	183	.22750	4.3956	508	11	49	882	593	662	106	11
50	212	781	897	.97502	10	50	910	624	611	.97100	10
51	240	811	838	496	9	51	938	655	560	093	9
52	.22268	842	779	489	8	52	966	.24686	4.0509	086	8
53	297	872	721	483	7	53	.23995	717	459	079	7
54	325	903	662	476	6	54	.24023	747	408	072	6
55	353	934	604	470	5	55	051	778	358	065	5
56	382	964	546	463	4	56	079	809	308	058	4
57	410	.22995	488	457	3	57	108	840	257	051	3
58	438	.23026	430	450	2	58	136	871	207	044	2
59	467	056	372	444	1	59	164	902	158	037	1
60	.22495	.23087	4.3315	.97437	0	60	.24192	.24933	4.0108	.97030	0
	cos	cot	tan	sin			cos	cot	tan	sin	
77°						76°					

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

14°

	sin	tan	cot	cos	
0	.24192	.24933	4.0108	.97030	60
1	220	964	058	023	59
2	249	.24995	4.0009	015	58
3	277	.25026	3.9959	008	57
4	305	056	910	.97001	56
5	333	087	861	.96994	55
6	362	118	812	987	54
7	390	149	763	980	53
8	418	180	714	973	52
9	.24446	211	665	966	51
10	474	242	617	959	50
11	503	.25273	568	952	49
12	531	304	3.9520	945	48
13	559	335	471	.96937	47
14	587	366	423	930	46
15	615	397	375	923	45
16	644	428	327	916	44
17	672	459	279	909	43
18	700	.25490	232	902	42
19	.24728	521	184	894	41
20	756	552	136	887	40
21	784	583	089	.96880	39
22	813	614	3.9042	873	38
23	841	645	3.8995	866	37
24	869	676	947	858	36
25	897	707	900	851	35
26	925	.25738	854	844	34
27	954	769	807	837	33
28	.24982	800	760	829	32
29	.25010	831	714	.96822	31
30	038	862	3.8667	815	30
31	066	893	621	807	29
32	094	924	575	800	28
33	122	955	528	793	27
34	151	.25986	482	786	26
35	179	.26017	436	778	25
36	207	048	391	771	24
37	.25235	079	3.8345	.96764	23
38	263	110	299	756	22
39	291	141	254	749	21
40	320	172	208	742	20
41	348	203	163	734	19
42	376	235	118	727	18
43	404	.26266	073	719	17
44	.25432	297	3.8028	712	16
45	460	328	3.7983	.96705	15
46	488	359	938	697	14
47	516	390	893	690	13
48	545	421	848	682	12
49	573	452	804	675	11
50	601	483	760	667	10
51	629	515	715	660	9
52	.25657	.26546	3.7671	653	8
53	685	577	.96645	646	7
54	713	608	583	638	6
55	741	639	539	630	5
56	769	670	495	623	4
57	798	701	451	615	3
58	826	733	408	608	2
59	854	764	364	600	1
60	.25882	.26795	3.7321	.96593	0
	cos	cot	tan	sin	

75°

15°

	sin	tan	cot	cos	
0	.25882	.26795	3.7321	.96593	60
1	910	826	277	585	59
2	938	857	234	578	58
3	966	888	191	570	57
4	.25994	920	148	562	56
5	.26022	951	105	555	55
6	050	.26982	062	547	54
7	079	.27013	3.7019	540	53
8	107	044	3.6976	532	52
9	135	076	933	524	51
10	163	107	891	.96517	50
11	191	138	848	509	49
12	219	169	806	502	48
13	.26247	201	764	494	47
14	275	232	722	486	46
15	303	.27263	680	479	45
16	331	294	3.6638	471	44
17	359	326	596	463	43
18	387	357	554	456	42
19	415	388	512	448	41
20	443	419	470	.96440	40
21	.26471	451	429	433	39
22	500	.27482	387	425	38
23	528	513	346	417	37
24	556	545	3.6305	410	36
25	584	576	264	402	35
26	612	607	222	394	34
27	640	638	181	386	33
28	668	670	140	379	32
29	696	701	100	371	31
30	.26724	.27732	059	.96363	30
31	752	764	3.6018	355	29
32	780	795	3.5978	347	28
33	808	826	937	340	27
34	836	858	897	332	26
35	864	889	856	324	25
36	892	921	816	316	24
37	920	952	776	308	23
38	948	.27983	736	301	22
39	.26976	.28015	696	293	21
40	.27004	046	3.5656	.96285	20
41	032	077	616	277	19
42	060	109	576	269	18
43	088	140	536	261	17
44	116	172	497	253	16
45	144	203	457	246	15
46	172	.28234	418	238	14
47	200	266	379	230	13
48	228	297	3.5339	222	12
49	256	329	300	214	11
50	.27284	360	261	.96206	10
51	312	391	222	198	9
52	340	423	183	190	8
53	368	.28454	144	182	7
54	396	486	105	174	6
55	424	517	067	166	5
56	452	549	3.5028	158	4
57	480	580	3.4989	150	3
58	508	612	951	142	2
59	536	643	912	134	1
60	.27564	.28675	3.4874	.96126	0
	cos	cot	tan	sin	

74°

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

16°					17°				
	sin	tan	cot	cos		sin	tan	cot	cos
0	.27564	.28675	3.4874	.96126	60	.29237	.30573	3.2709	.95630
1	592	706	836	118	59	265	605	675	622
2	620	738	798	110	58	293	637	641	613
3	648	769	760	102	57	321	669	607	605
4	676	801	722	094	56	348	700	573	596
5	704	832	684	086	55	376	732	539	588
6	731	864	646	078	54	404	764	506	579
7	.27759	895	608	.96070	53	432	.30796	3.2472	571
8	787	927	3.4570	062	52	460	828	438	562
9	815	958	533	054	51	.29487	860	405	554
10	843	.28990	495	046	50	515	891	371	.95545
11	871	.29021	458	037	49	543	923	338	536
12	899	053	420	029	48	571	955	305	528
13	927	084	383	021	47	599	.30987	272	519
14	955	116	346	013	46	626	.31019	3.2238	511
15	.27983	147	3.4308	.96005	45	654	051	205	502
16	.28011	179	271	.95997	44	682	083	172	493
17	039	210	234	989	43	710	115	139	485
18	067	.29242	197	981	42	.29737	147	106	476
19	095	274	160	972	41	765	178	073	467
20	123	305	124	964	40	793	210	041	.95459
21	150	337	087	956	39	821	242	3.2008	450
22	178	368	050	948	38	849	.31274	3.1975	441
23	206	400	3.4014	940	37	876	306	943	433
24	.28234	432	3.3977	931	36	904	338	910	424
25	262	.29463	941	.95923	35	932	370	878	415
26	290	495	904	915	34	960	402	845	407
27	318	526	868	907	33	.29987	434	813	398
28	346	558	832	898	32	.30015	466	780	389
29	374	590	796	890	31	043	.31498	3.1748	380
30	402	621	759	882	30	071	530	716	.95372
31	429	653	723	874	29	098	562	684	363
32	457	685	687	865	28	126	594	652	354
33	.28485	.29716	3.3652	.95857	27	154	626	620	345
34	513	748	616	849	26	182	658	588	337
35	541	780	580	841	25	209	690	556	328
36	569	811	544	832	24	237	722	524	319
37	597	843	509	824	23	.30265	.31754	3.1492	310
38	625	875	473	816	22	292	786	460	301
39	652	906	438	807	21	320	818	429	293
40	680	938	402	799	20	348	850	397	.95284
41	708	.29970	367	791	19	376	882	366	275
42	.28736	.30001	3.3332	.95782	18	403	914	334	260
43	764	033	297	774	17	431	946	303	257
44	792	065	261	766	16	459	.31978	3.1271	248
45	820	097	226	757	15	.30486	.32010	240	240
46	847	128	191	749	14	514	042	209	231
47	875	160	156	740	13	542	074	178	222
48	903	192	122	732	12	570	106	146	213
49	931	224	087	724	11	597	139	115	204
50	959	255	052	715	10	625	171	084	.95195
51	.28987	.30287	3.3017	.95707	9	653	203	053	186
52	.29015	319	3.2983	698	8	680	235	3.1022	177
53	042	351	948	690	7	.30708	.32267	3.0991	168
54	070	382	914	681	6	736	299	961	159
55	098	414	879	673	5	763	331	930	150
56	126	446	845	664	4	791	363	899	142
57	154	478	811	656	3	819	396	868	133
58	182	509	777	647	2	846	428	838	124
59	209	541	743	639	1	874	460	807	115
60	.29237	.30573	3.2709	.95630	0	.30902	.32492	3.0777	.95106
	cos	cot	tan	sin		cos	cot	tan	sin
73°					72°				

AIR NAVIGATION TABLES

Table I. *Natural Trigonometric Functions—Continued*

18°

	sin	tan	cot	cos	
0	.30902	.32492	3.0777	.95106	60
1	929	524	746	097	59
2	957	556	716	088	58
3	.30985	588	686	079	57
4	.31012	621	655	070	56
5	040	653	625	061	55
6	068	685	595	.95052	54
7	095	717	565	043	53
8	123	.32749	535	033	52
9	151	782	3.0505	024	51
10	178	814	475	015	50
11	206	846	445	.95006	49
12	233	878	415	.94997	48
13	261	911	385	988	47
14	.31289	943	356	979	46
15	316	.32975	326	970	45
16	344	.33007	296	961	44
17	372	040	3.0267	952	43
18	399	072	237	943	42
19	427	104	208	933	41
20	454	136	178	.94924	40
21	482	169	149	915	39
22	.31510	201	120	906	38
23	537	233	090	897	37
24	565	.33266	061	888	36
25	593	298	032	878	35
26	620	330	3.0003	869	34
27	648	363	2.9974	860	33
28	675	395	945	.94851	32
29	703	427	916	842	31
30	730	460	887	832	30
31	.31758	.33492	858	823	29
32	786	524	829	814	28
33	813	557	800	805	27
34	841	589	772	795	26
35	868	621	2.9743	786	25
36	896	654	714	.94777	24
37	923	686	686	768	23
38	951	.33718	657	758	22
39	.31979	751	629	749	21
40	.32006	783	600	740	20
41	034	816	572	730	19
42	061	848	544	721	18
43	089	881	515	712	17
44	116	913	2.9487	.94702	16
45	144	945	459	693	15
46	171	.33978	431	684	14
47	199	.34010	403	674	13
48	227	043	375	665	12
49	254	075	347	656	11
50	.32282	108	319	646	10
51	309	140	2.9291	637	9
52	337	173	263	.94627	8
53	364	205	235	618	7
54	392	.34238	208	609	6
55	419	270	180	599	5
56	447	303	152	590	4
57	474	335	125	580	3
58	502	368	097	571	2
59	529	400	070	561	1
60	.32557	.34433	2.9042	.94552	0
	cos	cot	tan	sin	

71°

19°

	sin	tan	cot	cos	
0	.32557	.34433	2.9042	.94552	60
1	584	465	2.9015	542	59
2	612	498	2.8987	533	58
3	639	530	960	523	57
4	667	563	933	514	56
5	694	596	905	.504	55
6	722	628	878	495	54
7	749	661	851	485	53
8	.32777	693	824	476	52
9	804	.34726	797	466	51
10	832	758	770	.94457	50
11	859	791	2.8743	447	49
12	887	824	716	438	48
13	914	856	689	428	47
14	942	889	662	418	46
15	969	922	636	409	45
16	.32997	954	609	399	44
17	.33024	.34987	582	390	43
18	051	.35020	556	380	42
19	079	052	529	370	41
20	106	085	2.8502	.94361	40
21	134	118	476	351	39
22	161	150	449	342	38
23	189	183	423	332	37
24	.33216	216	397	322	36
25	244	.35248	370	313	35
26	271	281	344	303	34
27	298	314	318	293	33
28	326	346	291	284	32
29	353	379	2.8265	274	31
30	381	412	239	.94264	30
31	.33408	.35445	213	254	29
32	436	477	187	245	28
33	463	510	161	235	27
34	490	543	135	225	26
35	518	576	109	215	25
36	545	608	083	206	24
37	573	641	057	196	23
38	.33600	674	032	186	22
39	627	.35707	2.8006	176	21
40	655	740	2.7980	.94167	20
41	682	772	955	157	19
42	710	805	929	147	18
43	737	838	903	137	17
44	764	871	878	127	16
45	.33792	904	852	118	15
46	819	937	2.7827	108	14
47	846	.35969	801	098	13
48	874	.36002	776	.94088	12
49	901	035	751	078	11
50	929	068	725	068	10
51	956	101	700	058	9
52	.33983	134	675	049	8
53	.34011	167	2.7650	039	7
54	038	.36199	625	029	6
55	065	232	600	019	5
56	093	265	575	.94009	4
57	120	298	550	.93999	3
58	147	331	525	989	2
59	175	364	500	979	1
60	.34202	.36397	2.7475	.93969	0
	cos	cot	tan	sin	

70°

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

20°						21°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.34202	.36397	2.7475	.93969	60	0	.35837	.38386	2.6051	.93358	60
1	229	430	450	959	59	1	864	420	028	348	59
2	257	463	425	949	58	2	891	453	2.6006	337	58
3	284	496	400	939	57	3	918	487	2.5983	327	57
4	311	529	376	929	56	4	945	520	961	316	56
5	339	562	351	919	55	5	.35973	553	938	306	55
6	366	595	326	909	54	6	.36000	587	916	295	54
7	.34393	628	302	899	53	7	027	620	893	285	53
8	421	661	277	889	52	8	054	654	871	.93274	52
9	448	.36694	2.7253	879	51	9	081	.38687	848	264	51
10	475	727	228	.93869	50	10	108	721	826	253	50
11	503	760	204	859	49	11	135	754	2.5804	243	49
12	530	793	179	849	48	12	162	787	782	232	48
13	557	826	155	839	47	13	190	821	759	222	47
14	.34584	859	130	829	46	14	217	854	737	211	46
15	612	892	106	819	45	15	.36244	888	715	201	45
16	639	925	082	809	44	16	271	921	693	.93190	44
17	666	958	058	799	43	17	298	955	671	180	43
18	694	.36991	034	789	42	18	325	.38988	2.5649	169	42
19	721	.37024	2.7009	779	41	19	352	.39022	627	159	41
20	748	057	2.6985	.93769	40	20	379	055	605	148	40
21	.34775	090	961	759	39	21	406	089	583	137	39
22	803	123	937	748	38	22	434	122	561	127	38
23	830	157	913	738	37	23	461	156	539	116	37
24	857	190	889	728	36	24	.36488	190	517	106	36
25	884	223	865	718	35	25	515	223	2.5495	.93095	35
26	912	.37256	841	708	34	26	542	.39257	473	084	34
27	939	289	818	698	33	27	569	290	452	074	33
28	966	322	2.6794	688	32	28	596	324	430	063	32
29	.34993	355	770	677	31	29	623	357	408	052	31
30	.35021	388	746	.93667	30	30	650	391	386	042	30
31	048	422	723	657	29	31	677	425	365	031	29
32	075	455	699	647	28	32	704	458	2.5343	020	28
33	102	.37488	675	637	27	33	.36731	.39492	322	.93010	27
34	130	521	652	626	26	34	758	526	300	.92999	26
35	157	554	628	616	25	35	785	559	279	988	25
36	184	588	2.6605	606	24	36	812	593	257	978	24
37	.35211	621	581	596	23	37	839	626	236	967	23
38	239	654	558	585	22	38	867	660	214	956	22
39	266	687	534	575	21	39	894	694	193	945	21
40	293	.37720	511	.93565	20	40	921	.39727	2.5172	935	20
41	320	754	488	555	19	41	948	761	150	924	19
42	347	787	464	544	18	42	.36975	795	129	913	18
43	375	820	441	534	17	43	.37002	829	108	.92902	17
44	.35402	853	2.6418	524	16	44	029	862	086	892	16
45	429	887	395	514	15	45	056	896	065	881	15
46	456	920	371	503	14	46	083	930	044	870	14
47	484	953	348	493	13	47	110	963	023	859	13
48	511	.37986	325	483	12	48	137	.39997	2.5002	849	12
49	538	.38020	302	472	11	49	164	.40031	2.4981	838	11
50	565	053	279	.93462	10	50	191	065	960	827	10
51	.35592	086	256	452	9	51	218	098	939	816	9
52	619	120	2.6233	441	8	52	.37245	132	918	.92805	8
53	647	153	210	431	7	53	272	166	897	794	7
54	674	186	187	420	6	54	299	200	876	784	6
55	701	220	165	410	5	55	326	234	2.4855	773	5
56	728	253	142	400	4	56	353	267	834	762	4
57	755	286	119	389	3	57	380	301	813	751	3
58	782	320	096	379	2	58	407	335	792	740	2
59	810	353	074	368	1	59	434	369	772	729	1
60	.35837	.38386	2.6051	.93358	0	60	.37461	.40403	2.4751	.92718	0
	cos	cot	tan	sin			cos	cot	tan	sin	
69°						68°					

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

22°						23°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.37461	.40403	2.4751	.92718	60	0	.39073	.42447	2.3559	.92050	60
1	488	436	730	707	59	1	100	482	539	039	59
2	515	470	709	697	58	2	127	516	520	028	58
3	542	504	689	686	57	3	153	551	501	016	57
4	569	538	668	675	56	4	180	585	483	.92005	56
5	595	572	648	664	55	5	207	619	464	.91994	55
6	622	606	627	653	54	6	234	654	445	982	54
7	649	640	606	642	53	7	260	688	2.3426	971	53
8	676	674	586	631	52	8	287	.42722	407	959	52
9	703	.40707	2.4566	620	51	9	.39314	757	388	948	51
10	.37730	741	545	.92609	50	10	341	791	369	936	50
11	757	775	525	598	49	11	367	826	351	925	49
12	784	809	504	587	48	12	394	860	332	914	48
13	811	843	484	576	47	13	421	894	313	.91902	47
14	838	877	464	565	46	14	448	929	2.3294	891	46
15	865	911	443	554	45	15	474	963	276	879	45
16	892	945	423	543	44	16	501	.42998	257	868	44
17	919	.40979	403	532	43	17	528	.43032	238	856	43
18	946	.41013	2.4383	521	42	18	.39555	067	220	845	42
19	973	047	362	510	41	19	581	101	201	833	41
20	.37999	081	342	.92499	40	20	608	136	183	822	40
21	.38026	115	322	488	39	21	635	170	2.3164	.91810	39
22	053	149	302	477	38	22	661	205	146	799	38
23	080	183	282	466	37	23	688	239	127	787	37
24	107	217	262	455	36	24	715	274	109	775	36
25	134	.41251	242	444	35	25	741	308	090	764	35
26	161	285	222	432	34	26	.39768	.43343	072	752	34
27	188	319	2.4202	421	33	27	795	378	053	741	33
28	215	353	182	410	32	28	822	412	035	729	32
29	241	387	162	399	31	29	848	447	2.3017	.91718	31
30	.38268	421	142	.92388	30	30	875	481	2.2998	706	30
31	295	455	122	377	29	31	902	516	980	694	29
32	322	.41490	102	366	28	32	928	550	962	683	28
33	349	524	083	355	27	33	955	585	944	671	27
34	376	558	063	343	26	34	.39982	620	925	660	26
35	403	592	043	332	25	35	.40008	.43654	907	648	25
36	430	626	023	321	24	36	035	689	889	636	24
37	456	660	2.4004	310	23	37	062	724	2.2871	.91625	23
38	483	694	2.3984	299	22	38	088	758	853	613	22
39	.38510	.41728	964	287	21	39	115	793	835	601	21
40	537	763	945	.92276	20	40	141	828	817	590	20
41	564	797	925	265	19	41	168	862	799	578	19
42	591	831	906	254	18	42	195	897	781	566	18
43	617	865	886	243	17	43	.40221	932	763	555	17
44	644	899	867	231	16	44	248	.43966	745	543	16
45	671	933	2.3847	220	15	45	275	.44001	2.2727	.91531	15
46	698	.41968	828	209	14	46	301	036	709	519	14
47	725	.42002	808	198	13	47	328	071	691	508	13
48	.38752	036	789	186	12	48	355	105	673	496	12
49	778	070	770	175	11	49	381	140	655	484	11
50	805	105	750	.92164	10	50	408	175	637	472	10
51	832	139	731	152	9	51	.40434	210	620	461	9
52	859	173	2.3712	141	8	52	461	.44244	2.2602	.91449	8
53	886	207	693	130	7	53	488	279	584	437	7
54	912	.42242	673	119	6	54	514	314	566	425	6
55	939	276	654	107	5	55	541	349	549	414	5
56	966	310	635	096	4	56	567	384	531	402	4
57	.38993	345	616	085	3	57	594	418	513	390	3
58	.39020	379	597	073	2	58	621	453	496	378	2
59	046	413	578	062	1	59	647	488	478	366	1
60	.39073	.42447	2.3559	.92050	0	60	.40674	.44523	2.2460	.91355	0
	cos	cot	tan	sin			cos	cot	tan	sin	
67°						66°					

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

24°						25°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.40674	.44523	2.2460	.91355	60	0	.42262	.46631	2.1445	.90631	60
1	700	558	443	343	59	1	288	666	429	618	59
2	727	593	425	331	58	2	315	702	413	606	58
3	753	627	408	319	57	3	341	737	396	594	57
4	780	662	390	307	56	4	367	772	380	582	56
5	806	697	373	295	55	5	394	808	364	569	55
6	.40833	732	355	283	54	6	420	843	348	557	54
7	860	.44767	338	.91272	53	7	.42446	879	332	545	53
8	886	802	320	260	52	8	473	914	315	532	52
9	913	837	2.2303	248	51	9	499	950	2.1299	520	51
10	939	872	286	236	50	10	525	.46985	283	.90507	50
11	966	907	268	224	49	11	552	.47021	267	495	49
12	.40992	942	251	212	48	12	578	056	251	483	48
13	.41019	.44977	234	200	47	13	604	092	235	470	47
14	045	.45012	216	188	46	14	.42631	128	219	458	46
15	072	047	199	.91176	45	15	657	163	203	446	45
16	098	082	182	164	44	16	683	199	187	433	44
17	125	117	2.2165	152	43	17	709	234	171	421	43
18	151	152	148	140	42	18	736	270	2.1155	408	42
19	178	187	130	128	41	19	762	305	139	396	41
20	204	222	113	116	40	20	788	.47341	123	.90383	40
21	231	.45257	096	104	39	21	.42815	377	107	371	39
22	.41257	292	079	.91092	38	22	841	412	092	358	38
23	284	327	062	080	37	23	867	448	076	346	37
24	310	362	045	068	36	24	894	483	060	334	36
25	337	397	028	056	35	25	920	519	044	321	35
26	363	432	2.2011	044	34	26	946	555	028	309	34
27	390	467	2.1994	032	33	27	972	590	2.1013	296	33
28	416	.45502	977	020	32	28	.42999	626	2.0997	284	32
29	443	538	960	.91008	31	29	.43025	.47662	981	271	31
30	469	573	943	.90996	30	30	051	698	965	.90259	30
31	.41496	608	926	984	29	31	077	733	950	246	29
32	522	643	909	972	28	32	104	769	934	233	28
33	549	678	892	960	27	33	130	805	918	221	27
34	575	713	876	948	26	34	156	840	903	208	26
35	602	.45748	2.1859	936	25	35	182	876	887	196	25
36	628	784	842	924	24	36	209	912	2.0872	183	24
37	655	819	825	.90911	23	37	.43235	948	856	171	23
38	681	854	808	899	22	38	261	.47984	840	158	22
39	707	889	792	887	21	39	287	.48019	825	146	21
40	.41734	924	775	875	20	40	313	055	809	.90133	20
41	760	960	758	863	19	41	340	091	794	120	19
42	787	.45995	742	851	18	42	366	127	778	108	18
43	813	.46030	2.1725	839	17	43	392	163	763	095	17
44	840	065	708	826	16	44	.43418	198	2.0748	082	16
45	866	101	692	814	15	45	445	234	732	070	15
46	892	136	675	90802	14	46	471	.48270	717	057	14
47	919	171	659	790	13	47	497	306	701	045	13
48	945	206	642	778	12	48	523	342	686	032	12
49	972	242	625	766	11	49	549	378	671	019	11
50	.41998	277	609	753	10	50	575	414	655	.90007	10
51	.42024	312	592	741	9	51	602	450	640	.89994	9
52	051	.46348	2.1576	729	8	52	.43628	486	2.0625	981	8
53	077	383	560	.90717	7	53	654	.48521	609	968	7
54	104	418	543	704	6	54	680	557	594	956	6
55	130	454	527	692	5	55	706	593	579	943	5
56	156	489	510	680	4	56	733	629	564	930	4
57	183	525	494	668	3	57	759	665	549	918	3
58	209	560	478	655	2	58	785	701	533	905	2
59	235	595	461	643	1	59	811	737	518	892	1
60	.42262	.46631	2.1445	.90631	0	60	.43837	.48773	2.0503	.89879	0
65°						64°					
	cos	cot	tan	sin			cos	cot	tan	sin	

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

26°

	sin	tan	cot	cos	
0	.43837	.48773	2.0503	.89879	60
1	863	809	488	867	59
2	889	845	473	854	58
3	916	881	458	841	57
4	942	917	443	828	56
5	968	953	428	816	55
6	.43994	.48989	413	803	54
7	.44020	.49026	398	790	53
8	046	062	2.0383	777	52
9	072	098	368	764	51
10	098	134	353	.89752	50
11	124	170	338	739	49
12	151	206	323	726	48
13	177	242	308	713	47
14	203	278	293	700	46
15	.44229	.49315	2.0278	687	45
16	255	351	263	674	44
17	281	387	248	662	43
18	307	423	233	649	42
19	333	459	219	636	41
20	359	495	204	.89623	40
21	385	532	189	610	39
22	.44411	568	174	597	38
23	437	604	160	584	37
24	464	.49640	2.0145	571	36
25	490	677	130	558	35
26	516	713	115	545	34
27	542	749	101	532	33
28	568	786	086	519	32
29	.44594	822	072	506	31
30	620	858	057	.89493	30
31	646	894	042	480	29
32	672	931	028	467	28
33	698	.49967	2.0013	454	27
34	724	.50004	1.9999	441	26
35	750	040	984	428	25
36	.44776	076	970	415	24
37	802	113	955	402	23
38	828	149	941	389	22
39	854	185	926	376	21
40	880	222	912	.89363	20
41	906	258	897	350	19
42	932	295	883	337	18
43	958	.50331	1.9868	324	17
44	.44984	368	854	311	16
45	.45010	404	840	298	15
46	036	441	825	285	14
47	062	477	811	272	13
48	088	514	797	259	12
49	114	550	782	245	11
50	140	587	768	.89232	10
51	166	623	754	219	9
52	.45192	.50660	1.9740	206	8
53	218	696	725	193	7
54	243	733	711	180	6
55	269	769	697	167	5
56	295	806	683	153	4
57	321	843	669	140	3
58	347	879	654	127	2
59	373	916	640	114	1
60	.45399	.50953	1.9626	.89101	0
	cos	cot	tan	sin	

63°

27°

	sin	tan	cot	cos	
0	.45399	.50953	1.9626	.89101	60
1	425	.50989	612	087	59
2	451	.51026	598	074	58
3	477	063	584	061	57
4	503	099	570	048	56
5	529	136	556	035	55
6	554	173	542	021	54
7	.45580	209	528	.89008	53
8	606	246	1.9514	.88995	52
9	632	283	500	981	51
10	658	319	486	968	50
11	684	.51356	472	955	49
12	710	393	458	942	48
13	736	430	444	928	47
14	762	467	430	915	46
15	.45787	503	1.9416	902	45
16	813	540	402	.88888	44
17	839	577	388	875	43
18	865	614	375	862	42
19	891	651	361	848	41
20	917	.51688	347	835	40
21	942	724	333	822	39
22	968	761	1.9319	808	38
23	.45994	798	306	795	37
24	.46020	835	292	.88782	36
25	046	872	278	768	35
26	072	909	265	755	34
27	097	946	251	741	33
28	123	.51983	237	728	32
29	149	.52020	1.9223	715	31
30	175	057	210	701	30
31	201	094	196	.88688	29
32	226	131	183	674	28
33	.46252	168	169	661	27
34	278	205	155	647	26
35	304	242	142	634	25
36	330	279	128	620	24
37	355	316	1.9115	607	23
38	381	.52353	101	.88593	22
39	407	390	088	580	21
40	433	427	074	566	20
41	458	464	061	553	19
42	.46484	501	047	539	18
43	510	538	034	526	17
44	536	575	020	512	16
45	561	613	1.9007	.88499	15
46	587	650	1.8993	485	14
47	613	.52687	980	472	13
48	639	724	967	458	12
49	664	761	953	445	11
50	690	798	940	431	10
51	.46716	836	927	417	9
52	742	873	913	404	8
53	767	910	1.8900	.88390	7
54	793	947	887	377	6
55	819	.52985	873	363	5
56	844	.53022	860	349	4
57	870	059	847	336	3
58	896	096	834	322	2
59	921	134	820	308	1
60	.46947	.53171	1.8807	.88295	0
	cos	cot	tan	sin	

62°

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

28°						29°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.46947	.53171	1.8807	.88295	60	0	.48481	.55431	1.8040	.87462	60
1	973	208	794	281	59	1	506	469	028	448	59
2	.46999	246	781	267	58	2	532	507	016	434	58
3	.47024	283	768	254	57	3	557	545	1.8003	420	57
4	050	320	755	240	56	4	583	583	1.7991	406	56
5	076	358	741	226	55	5	608	621	979	391	55
6	101	395	728	213	54	6	634	659	966	377	54
7	127	.53432	715	.88199	53	7	659	.55697	954	363	53
8	153	470	702	185	52	8	684	736	942	.87349	52
9	178	507	689	172	51	9	710	774	930	335	51
10	.47204	545	1.8676	158	50	10	.48735	812	917	321	50
11	229	582	663	144	49	11	761	850	905	306	49
12	255	620	650	130	48	12	786	888	1.7893	292	48
13	281	657	637	117	47	13	811	926	881	278	47
14	306	694	624	.88103	46	14	837	.55964	868	264	46
15	332	.53732	611	089	45	15	862	.56003	856	250	45
16	358	769	598	075	44	16	888	041	844	.87235	44
17	383	807	585	062	43	17	913	079	832	221	43
18	.47409	844	572	048	42	18	938	117	820	207	42
19	434	882	559	034	41	19	964	156	808	193	41
20	460	920	1.8546	020	40	20	.48989	194	1.7796	178	40
21	486	957	533	.88006	39	21	.49014	232	783	164	39
22	511	.53995	520	.87993	38	22	040	270	771	150	38
23	537	.54032	507	979	37	23	065	.56309	759	136	37
24	562	070	495	965	36	24	090	347	747	.87121	36
25	588	107	482	951	35	25	116	385	735	107	35
26	.47614	145	469	937	34	26	141	424	723	093	34
27	639	183	456	923	33	27	166	462	711	079	33
28	665	220	443	909	32	28	.49192	501	1.7699	064	32
29	690	258	430	896	31	29	217	539	687	050	31
30	716	296	1.8418	.87882	30	30	242	.56577	675	036	30
31	741	.54333	405	868	29	31	268	616	663	021	29
32	767	371	392	854	28	32	293	654	651	.87007	28
33	793	409	379	840	27	33	318	693	639	.86993	27
34	.47818	446	367	826	26	34	344	731	627	978	26
35	844	484	354	812	25	35	369	769	615	964	25
36	869	522	341	798	24	36	.49394	808	1.7603	949	24
37	895	560	329	.87784	23	37	419	846	591	935	23
38	920	597	316	770	22	38	445	885	579	921	22
39	946	635	303	756	21	39	470	923	567	906	21
40	971	.54673	1.8291	743	20	40	495	.56962	556	892	20
41	.47997	711	278	729	19	41	521	.57000	544	878	19
42	.48022	748	265	715	18	42	546	039	532	.86863	18
43	048	786	253	701	17	43	571	078	520	849	17
44	073	824	240	687	16	44	.49596	116	1.7508	834	16
45	099	862	228	.87673	15	45	622	155	496	820	15
46	124	900	215	659	14	46	647	193	485	805	14
47	150	938	202	645	13	47	672	232	473	791	13
48	175	.54975	190	631	12	48	697	271	461	777	12
49	201	.55013	177	617	11	49	723	309	449	762	11
50	226	051	1.8165	603	10	50	748	.57348	437	748	10
51	.48252	089	152	589	9	51	773	386	426	.86733	9
52	277	127	140	.87575	8	52	.49798	425	1.7414	719	8
53	303	165	127	561	7	53	824	464	402	704	7
54	328	203	115	546	6	54	849	503	391	690	6
55	354	241	103	532	5	55	874	541	379	675	5
56	379	279	090	518	4	56	899	580	367	661	4
57	405	317	078	504	3	57	924	619	355	646	3
58	430	355	065	490	2	58	950	657	344	632	2
59	456	393	053	476	1	59	.49975	696	332	617	1
60	.48481	.55431	1.8040	.87462	0	60	.50000	.57735	1.7321	.86603	0
	cos	cot	tan	sin			cos	cot	tan	sin	
61°						60°					

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

30°

	sin	tan	cot	cos	
0	.50000	.57735	1.7321	.86603	60
1	025	774	309	588	59
2	050	813	297	573	58
3	076	851	286	559	57
4	101	890	274	544	56
5	126	929	262	530	55
6	151	.57968	251	515	54
7	176	.58007	239	501	53
8	201	046	228	.86486	52
9	227	085	1.7216	471	51
10	.50252	124	205	457	50
11	277	162	193	442	49
12	302	201	182	427	48
13	327	240	170	413	47
14	352	279	159	398	46
15	377	.58318	147	384	45
16	403	357	136	.86369	44
17	428	396	124	354	43
18	453	435	1.7113	340	42
19	478	474	102	325	41
20	.50503	513	090	310	40
21	528	552	079	295	39
22	553	591	067	281	38
23	578	631	056	266	37
24	603	.58670	045	.86251	36
25	628	709	033	237	35
26	654	748	022	222	34
27	679	787	1.7011	207	33
28	704	826	1.6999	192	32
29	729	865	988	178	31
30	.50754	905	977	163	30
31	779	944	965	148	29
32	804	.58983	954	.86133	28
33	829	.59022	943	119	27
34	854	061	932	104	26
35	879	101	920	089	25
36	904	140	1.6909	074	24
37	929	179	898	059	23
38	954	218	887	045	22
39	.50979	258	875	030	21
40	.51004	297	864	015	20
41	029	.59336	853	.86000	19
42	054	376	842	.85985	18
43	079	415	831	970	17
44	104	454	1.6820	956	16
45	129	494	808	941	15
46	154	533	797	926	14
47	179	573	786	911	13
48	204	612	775	896	12
49	229	.59651	764	881	11
50	.51254	691	753	866	10
51	279	730	742	.85851	9
52	304	770	1.6731	836	8
53	329	809	720	821	7
54	354	849	709	806	6
55	379	888	698	792	5
56	404	928	687	777	4
57	429	.59967	676	762	3
58	454	.60007	665	747	2
59	479	046	654	732	1
60	.51504	.60086	1.6643	.85717	0
	cos	cot	tan	sin	

59°

31°

	sin	tan	cot	cos	
0	.51504	.60086	1.6643	.85717	60
1	529	126	632	702	59
2	554	165	621	687	58
3	579	205	610	672	57
4	604	245	599	657	56
5	628	284	588	642	55
6	653	324	577	627	54
7	678	.60364	566	.85612	53
8	703	403	555	597	52
9	.51728	443	545	582	51
10	753	483	1.6534	567	50
11	778	522	523	551	49
12	803	562	512	536	48
13	828	602	501	521	47
14	852	642	490	506	46
15	877	.60681	479	.85491	45
16	902	721	469	476	44
17	927	761	458	461	43
18	952	801	447	446	42
19	.51977	841	436	431	41
20	.52002	881	1.6426	416	40
21	026	921	415	401	39
22	051	.60960	404	385	38
23	076	.61000	393	.85370	37
24	101	040	383	355	36
25	126	080	372	340	35
26	151	120	361	325	34
27	175	160	351	310	33
28	.52200	200	340	294	32
29	225	240	329	279	31
30	250	280	1.6319	264	30
31	275	.61320	308	.85249	29
32	299	360	297	234	28
33	324	400	287	218	27
34	349	440	276	203	26
35	374	480	265	188	25
36	.52399	520	255	173	24
37	423	561	244	157	23
38	448	601	234	142	22
39	473	.61641	223	.85127	21
40	498	681	1.6212	112	20
41	522	721	202	096	19
42	547	761	191	081	18
43	572	801	181	066	17
44	.52597	842	170	051	16
45	621	882	160	035	15
46	646	922	149	020	14
47	671	.61962	139	.85005	13
48	696	.62003	128	.84989	12
49	720	043	118	974	11
50	745	083	1.6107	959	10
51	.52770	124	097	943	9
52	794	164	087	928	8
53	819	204	076	913	7
54	844	.62245	066	.84997	6
55	869	285	055	882	5
56	893	325	045	866	4
57	918	366	034	851	3
58	943	406	024	836	2
59	967	446	014	820	1
60	.52992	.62487	1.6003	.84805	0
	cos	cot	tan	sin	

58°

ARMY AIR FORCES

Table I. Natural Trigonometric Functions--Continued

32°						33°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.52992	.62487	1.6003	.84805	60	0	.54464	.64941	1.5399	.83867	60
1	.53017	527	1.5993	789	59	1	488	.64982	389	851	59
2	041	568	983	774	58	2	513	.65024	379	835	58
3	066	608	972	759	57	3	537	065	369	819	57
4	091	649	962	743	56	4	561	106	359	804	56
5	115	689	952	728	55	5	586	148	350	788	55
6	140	.62730	941	712	54	6	610	189	340	772	54
7	164	770	931	697	53	7	54635	231	330	.83756	53
8	189	811	921	.84681	52	8	659	272	1.5320	740	52
9	.53214	852	911	666	51	9	683	.65314	311	724	51
10	238	892	1.5900	650	50	10	708	355	301	708	50
11	263	933	890	635	49	11	732	397	291	692	49
12	288	.62973	880	619	48	12	756	438	282	676	48
13	312	.63014	869	604	47	13	781	480	272	660	47
14	337	055	859	588	46	14	805	521	262	645	46
15	361	095	849	.84573	45	15	.54829	563	253	.83629	45
16	.53386	136	839	557	44	16	854	604	1.5243	613	44
17	411	177	829	542	43	17	878	.65646	233	597	43
18	435	217	818	526	42	18	902	688	224	581	42
19	460	258	808	511	41	19	927	729	214	565	41
20	484	299	1.5798	495	40	20	951	771	204	549	40
21	509	.63340	788	480	39	21	975	813	195	533	39
22	534	380	778	464	38	22	.54999	854	185	517	38
23	558	421	768	.84448	37	23	.55024	896	175	.83501	37
24	.53583	462	757	433	36	24	048	938	1.5166	485	36
25	607	503	747	417	35	25	072	.65980	156	469	35
26	632	544	737	402	34	26	097	.66021	147	453	34
27	656	584	727	386	33	27	121	063	137	437	33
28	681	625	717	370	32	28	145	105	127	421	32
29	705	.63666	707	355	31	29	169	147	118	405	31
30	730	707	1.5697	.84339	30	30	.55194	189	108	389	30
31	754	748	687	324	29	31	218	230	099	.83373	29
32	.53779	789	677	308	28	32	242	272	1.5089	356	28
33	804	830	667	292	27	33	266	314	080	340	27
34	828	871	657	277	26	34	291	.66356	070	.324	26
35	853	912	647	261	25	35	315	398	061	308	25
36	877	953	637	245	24	36	339	440	051	292	24
37	902	.63994	627	230	23	37	.55363	482	042	276	23
38	926	.64035	617	.84214	22	38	388	524	032	260	22
39	951	076	607	198	21	39	412	566	023	.83244	21
40	.53975	117	1.5597	182	20	40	436	608	.013	228	20
41	.54000	158	587	167	19	41	460	.66650	1.5004	212	19
42	024	199	577	151	18	42	484	692	1.4994	195	18
43	049	240	567	135	17	43	509	734	985	179	17
44	073	281	557	120	16	44	533	776	975	163	16
45	097	.64322	547	.84104	15	45	.55557	818	966	147	15
46	122	363	537	088	14	46	581	860	957	131	14
47	146	404	527	072	13	47	605	902	947	.83115	13
48	171	446	517	057	12	48	630	944	938	098	12
49	195	487	507	041	11	49	654	.66986	928	082	11
50	.54220	528	1.5497	025	10	50	678	.67028	919	066	10
51	244	569	487	.84009	9	51	702	071	1.4910	050	9
52	269	.64610	477	.83994	8	52	.55726	113	900	034	8
53	293	652	468	978	7	53	750	155	891	017	7
54	317	693	458	962	6	54	775	197	882	.83001	6
55	342	734	448	946	5	55	799	239	872	.82985	5
56	366	775	438	930	4	56	823	282	863	969	4
57	391	817	428	915	3	57	847	324	854	953	3
58	415	858	418	899	2	58	871	366	844	936	2
59	440	899	408	883	1	59	895	409	835	920	1
60	.54464	.64941	1.5399	.83867	0	60	.55919	.67451	1.4826	.82904	0
	cos	cot	tan	sin			cos	cot	tan	sin	
57°						56°					

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

34°

	sin	tan	cot	cos	
0	.55919	.67451	1.4826	.82904	60
1	943	493	816	887	59
2	968	536	807	871	58
3	.55992	578	798	855	57
4	.56016	620	788	839	56
5	040	663	779	822	55
6	064	.67705	770	806	54
7	088	748	761	790	53
8	112	790	751	773	52
9	136	832	742	.82757	51
10	160	875	1.4733	741	50
11	184	917	724	724	49
12	.56208	.67960	715	708	48
13	232	.68002	705	692	47
14	256	045	696	675	46
15	280	088	687	659	45
16	305	130	678	643	44
17	329	173	669	626	43
18	353	215	659	.82610	42
19	377	258	650	593	41
20	.56401	301	1.4641	577	40
21	425	.68343	632	561	39
22	449	386	623	544	38
23	473	429	614	528	37
24	497	471	605	511	36
25	521	514	596	495	35
26	545	557	586	478	34
27	569	600	577	.82462	33
28	.56593	.68642	568	446	32
29	617	685	559	429	31
30	641	728	1.4550	413	30
31	665	771	541	396	29
32	689	814	532	380	28
33	713	857	523	363	27
34	736	900	514	347	26
35	760	942	505	330	25
36	.56784	.68985	496	.82314	24
37	808	.69028	487	297	23
38	832	071	478	281	22
39	856	114	469	264	21
40	880	157	1.4460	248	20
41	904	200	451	231	19
42	928	243	442	214	18
43	952	286	433	198	17
44	.56976	.69329	424	181	16
45	.57000	372	415	165	15
46	024	416	406	.82148	14
47	047	459	397	132	13
48	071	502	388	115	12
49	095	545	379	098	11
50	119	588	1.4370	082	10
51	143	631	361	065	9
52	167	.69675	352	048	8
53	.57191	718	344	032	7
54	215	761	335	.82015	6
55	238	804	326	.81999	5
56	262	847	317	982	4
57	286	891	308	965	3
58	310	934	299	949	2
59	334	.69977	290	932	1
60	.57358	.70021	1.4281	.81915	0
	cos	cot	tan	sin	

55°

35°

	sin	tan	cot	cos	
0	.57358	.70021	1.4281	.81915	60
1	381	064	273	899	59
2	405	107	264	882	58
3	429	151	255	865	57
4	453	194	246	848	56
5	477	238	237	832	55
6	501	281	229	815	54
7	524	.70325	220	.81798	53
8	548	368	1.4211	782	52
9	.57572	412	202	765	51
10	596	455	193	748	50
11	619	499	185	731	49
12	643	542	176	714	48
13	667	586	167	698	47
14	691	629	158	681	46
15	715	.70673	150	.81664	45
16	738	717	1.4141	647	44
17	762	760	132	631	43
18	.57786	804	124	614	42
19	810	848	115	597	41
20	833	891	106	580	40
21	857	935	097	563	39
22	881	.70979	089	546	38
23	904	.71023	080	.81530	37
24	928	066	1.4071	513	36
25	952	110	063	496	35
26	976	154	054	479	34
27	.57999	198	045	462	33
28	.58023	242	037	445	32
29	047	285	028	428	31
30	070	.71329	019	412	30
31	094	373	011	.81395	29
32	118	417	1.4002	378	28
33	141	461	1.3994	361	27
34	165	505	985	344	26
35	189	549	976	327	25
36	.58212	593	968	310	24
37	236	637	959	293	23
38	260	.71681	951	276	22
39	283	725	942	.81259	21
40	307	769	934	242	20
41	330	813	925	225	19
42	354	857	1.3916	208	18
43	378	901	908	191	17
44	.58401	946	899	174	16
45	425	.71990	891	157	15
46	449	.72034	882	140	14
47	472	078	874	.81123	13
48	496	122	865	106	12
49	519	167	857	089	11
50	543	211	848	072	10
51	567	255	1.3840	055	9
52	.58590	299	831	038	8
53	614	.72344	823	021	7
54	637	388	814	.81004	6
55	661	432	806	.80987	5
56	684	477	798	970	4
57	708	521	789	953	3
58	731	565	781	936	2
59	755	610	772	919	1
60	.58779	.72654	1.3764	.80902	0
	cos	cot	tan	sin	

54°

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

36°						37°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.58779	.72654	1.3764	.80902	60	0	.60182	.75355	1.3270	.79864	60
1	802	699	755	885	59	1	205	401	262	846	59
2	826	743	747	867	58	2	228	447	254	829	58
3	849	788	739	850	57	3	251	492	246	811	57
4	873	832	730	833	56	4	274	538	238	793	56
5	896	877	722	816	55	5	298	584	230	776	55
6	920	921	713	799	54	6	321	629	222	758	54
7	943	.72966	705	.80782	53	7	344	.75675	214	741	53
8	967	.73010	697	765	52	8	367	721	206	723	52
9	.58990	055	688	748	51	9	.60390	767	1.3198	706	51
10	.59014	100	1.3680	730	50	10	414	812	190	.79688	50
11	037	144	672	713	49	11	437	858	182	671	49
12	061	189	663	696	48	12	460	904	175	653	48
13	084	234	655	679	47	13	483	950	167	635	47
14	108	278	647	662	46	14	506	.75996	159	618	46
15	131	.73323	638	.80644	45	15	529	.76042	151	600	45
16	154	368	630	627	44	16	553	088	143	583	44
17	178	413	622	610	43	17	.60576	134	1.3135	565	43
18	201	457	613	593	42	18	599	180	127	547	42
19	.59225	502	605	576	41	19	622	226	119	530	41
20	248	547	1.3597	558	40	20	645	272	111	.79512	40
21	272	592	588	541	39	21	668	318	103	494	39
22	295	.73637	580	.80524	38	22	691	364	095	477	38
23	318	681	572	507	37	23	714	410	087	459	37
24	342	726	564	489	36	24	738	456	079	441	36
25	365	771	555	472	35	25	761	.76502	072	424	35
26	389	816	547	455	34	26	.60784	548	1.3064	406	34
27	.59412	861	539	438	33	27	807	594	056	388	33
28	436	906	531	420	32	28	830	640	048	371	32
29	459	951	522	403	31	29	853	686	040	353	31
30	482	.73996	1.3514	.80386	30	30	876	733	032	.79335	30
31	506	.74041	506	368	29	31	899	779	024	318	29
32	529	086	498	351	28	32	922	825	017	300	28
33	552	131	490	334	27	33	945	871	009	282	27
34	576	176	481	316	26	34	968	918	1.3001	264	26
35	.59599	221	473	299	25	35	.60991	.76964	1.2993	247	25
36	622	267	465	282	24	36	.61015	.77010	985	229	24
37	646	312	457	.80264	23	37	038	057	977	211	23
38	669	.74357	449	247	22	38	061	103	970	193	22
39	693	402	440	230	21	39	084	149	962	176	21
40	716	447	1.3432	212	20	40	107	196	954	.79158	20
41	739	492	424	195	19	41	130	242	946	140	19
42	763	538	416	178	18	42	153	289	938	122	18
43	.59786	583	408	160	17	43	176	.77335	1.2931	105	17
44	809	628	400	143	16	44	.61199	382	923	087	16
45	832	.74674	392	.80125	15	45	222	428	915	069	15
46	856	719	384	108	14	46	245	475	907	051	14
47	879	764	375	091	13	47	268	521	900	033	13
48	902	810	367	073	12	48	291	568	892	.79016	12
49	926	855	359	056	11	49	314	615	884	.78998	11
50	949	900	1.3351	038	10	50	337	.77661	876	980	10
51	972	946	343	021	9	51	360	708	869	.962	9
52	.59995	.74991	335	.80003	8	52	.61383	754	1.2861	944	8
53	.60019	.75037	327	.79986	7	53	406	801	853	926	7
54	042	082	319	968	6	54	429	848	846	908	6
55	065	128	311	951	5	55	451	895	838	891	5
56	089	173	303	934	4	56	474	941	830	873	4
57	112	219	295	916	3	57	497	.77988	822	855	3
58	135	264	287	899	2	58	520	.78035	815	837	2
59	158	310	278	881	1	59	543	082	807	819	1
60	.60182	.75355	1.3270	.79864	0	60	.61566	.78129	1.2799	.78801	0
	cos	cot	tan	sin			cos	cot	tan	sin	
53°						52°					

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

38°

	sin	tan	cot	cos	
0	.61566	.78129	1.2799	.78801	60
1	589	175	792	783	59
2	612	222	784	765	58
3	635	269	776	747	57
4	658	316	769	729	56
5	681	363	761	711	55
6	704	410	753	694	54
7	726	457	746	676	53
8	749	504	738	.78658	52
9	.61772	.78551	731	640	51
10	795	598	1.2723	622	50
11	818	645	715	604	49
12	841	692	708	586	48
13	864	739	700	568	47
14	887	786	693	550	46
15	909	834	685	.78532	45
16	932	881	677	514	44
17	955	928	670	496	43
18	.61978	.78975	662	478	42
19	.62001	.79022	655	460	41
20	024	070	1.2647	442	40
21	046	117	640	424	39
22	069	164	632	.78405	38
23	092	212	624	387	37
24	115	259	617	369	36
25	138	306	609	351	35
26	160	354	602	333	34
27	.62183	401	594	315	33
28	206	449	587	297	32
29	229	.79496	579	.78279	31
30	251	544	1.2572	261	30
31	274	591	564	243	29
32	297	639	557	225	28
33	320	686	549	206	27
34	342	734	542	188	26
35	.62365	781	534	170	25
36	388	829	527	.78152	24
37	411	877	519	134	23
38	433	924	512	116	22
39	456	.79972	504	098	21
40	479	.80020	1.2497	079	20
41	502	067	489	061	19
42	524	115	482	043	18
43	547	163	475	025	17
44	.62570	211	467	.78007	16
45	592	258	460	.77988	15
46	615	306	452	970	14
47	638	354	445	952	13
48	660	402	437	934	12
49	683	450	430	916	11
50	706	.80498	1.2423	897	10
51	728	546	415	.879	9
52	.62751	594	408	.77861	8
53	774	642	401	843	7
54	796	690	393	824	6
55	819	738	386	806	5
56	842	786	378	788	4
57	864	834	371	769	3
58	887	882	364	751	2
59	909	930	356	733	1
60	.62932	.80978	1.2349	.77715	0
	cos	cot	tan	sin	

51°

39°

	sin	tan	cot	cos	
0	.62932	.80978	1.2349	.77715	60
1	955	.81027	342	696	59
2	.62977	075	334	678	58
3	.63000	123	327	660	57
4	022	171	320	641	56
5	045	220	312	623	55
6	068	268	305	605	54
7	090	316	298	586	53
8	113	364	290	.77568	52
9	135	413	283	550	51
10	.63158	461	1.2276	531	50
11	180	.81510	268	513	49
12	203	558	261	494	48
13	225	606	254	476	47
14	248	655	247	458	46
15	271	703	239	439	45
16	293	752	232	.77421	44
17	.63316	800	225	402	43
18	338	849	218	384	42
19	361	898	210	366	41
20	383	946	1.2203	347	40
21	406	.81995	196	329	39
22	428	.82044	189	310	38
23	451	092	181	.77292	37
24	.63473	141	174	273	36
25	496	190	167	255	35
26	518	238	160	236	34
27	540	287	153	218	33
28	563	336	145	199	32
29	585	385	138	181	31
30	608	434	1.2131	.77162	30
31	.63630	.82483	124	144	29
32	653	531	117	125	28
33	675	580	109	107	27
34	698	629	102	088	26
35	720	678	095	070	25
36	742	727	088	051	24
37	765	776	081	033	23
38	787	825	074	.77014	22
39	.63810	874	066	.76996	21
40	832	923	1.2059	977	20
41	854	.82972	052	959	19
42	877	.83022	045	940	18
43	899	071	038	921	17
44	922	120	031	903	16
45	944	169	024	884	15
46	966	218	017	.76866	14
47	.63989	268	009	847	13
48	.64011	317	1.2002	828	12
49	033	366	1.1995	810	11
50	056	415	988	791	10
51	078	.83465	981	772	9
52	100	514	974	754	8
53	123	564	967	.76735	7
54	.64145	613	960	717	6
55	167	662	953	698	5
56	190	712	946	679	4
57	212	761	939	661	3
58	234	811	932	642	2
59	256	860	925	623	1
60	.64279	.83910	1.1918	.76604	0
	cos	cot	tan	sin	

50°

ARMY AIR FORCES

Table I. Natural Trigonometric Functions—Continued

40°						41°					
	sin	tan	cot	cos			sin	tan	cot	cos	
0	.64279	.83910	1.1918	.76604	60	0	.65606	.86929	1.1504	.75471	60
1	301	.83960	910	586	59	1	628	.86980	497	452	59
2	323	.84009	903	567	58	2	650	.87031	490	433	58
3	346	059	896	548	57	3	672	082	483	414	57
4	368	108	889	530	56	4	694	133	477	395	56
5	390	158	882	511	55	5	716	184	470	375	55
6	412	208	875	492	54	6	738	236	463	356	54
7	435	258	868	473	53	7	759	287	456	337	53
8	64457	307	861	.76455	52	8	781	338	450	.75318	52
9	479	357	854	436	51	9	.65803	389	443	299	51
10	501	407	1.1847	417	50	10	825	441	1.1436	280	50
11	524	.84457	840	398	49	11	847	.87492	430	261	49
12	546	507	833	380	48	12	869	543	423	241	48
13	568	556	826	361	47	13	891	595	416	222	47
14	590	606	819	342	46	14	913	646	410	203	46
15	612	656	812	323	45	15	935	698	403	184	45
16	.64635	706	806	.76304	44	16	956	749	396	.75165	44
17	657	756	799	286	43	17	.65978	801	389	146	43
18	679	806	792	267	42	18	.66000	852	383	126	42
19	701	856	785	248	41	19	022	904	376	107	41
20	723	906	1.1778	229	40	20	044	.87955	1.1369	088	40
21	746	.84956	771	210	39	21	066	.88007	363	069	39
22	768	.85006	764	192	38	22	088	059	356	050	38
23	790	057	757	173	37	23	109	110	349	030	37
24	.64812	107	750	.76154	36	24	131	162	343	.75011	36
25	834	157	743	135	35	25	.66153	214	336	.74992	35
26	856	207	736	116	34	26	175	265	329	973	34
27	878	257	729	097	33	27	197	317	323	953	33
28	901	308	722	078	32	28	218	369	316	934	32
29	923	358	715	059	31	29	240	421	310	915	31
30	945	408	1.1708	041	30	30	262	.88473	1.1303	896	30
31	967	.85458	702	022	29	31	284	524	296	876	29
32	.64989	509	695	.76003	28	32	.66306	576	290	857	28
33	.65011	559	688	.75984	27	33	327	628	283	838	27
34	033	609	681	965	26	34	349	680	276	.74818	26
35	055	660	674	946	25	35	371	732	270	799	25
36	077	710	667	927	24	36	393	784	263	780	24
37	100	761	660	908	23	37	414	836	257	760	23
38	122	811	653	889	22	38	436	888	250	741	22
39	144	862	647	870	21	39	.66458	940	243	722	21
40	166	912	1.160	851	20	40	480	.88992	1.1237	703	20
41	188	.85963	633	832	19	41	501	.89045	230	683	19
42	.65210	.86014	626	.75813	18	42	523	097	224	664	18
43	232	064	619	794	17	43	545	149	217	.74644	17
44	254	115	612	775	16	44	566	201	211	625	16
45	276	166	606	756	15	45	588	253	204	606	15
46	298	216	599	738	14	46	.66610	306	197	586	14
47	320	267	592	719	13	47	632	358	191	567	13
48	342	318	585	700	12	48	653	410	184	548	12
49	364	368	578	680	11	49	675	463	178	528	11
50	.65386	419	1.1571	661	10	50	697	.89515	1.1171	509	10
51	408	.86470	565	.75642	9	51	718	567	165	.74489	9
52	430	521	558	623	8	52	740	620	158	470	8
53	452	572	551	604	7	53	.66762	672	152	451	7
54	474	623	544	585	6	54	783	725	145	431	6
55	496	674	538	566	5	55	805	777	139	412	5
56	518	725	531	547	4	56	827	830	132	392	4
57	540	776	524	528	3	57	848	883	126	373	3
58	562	827	517	509	2	58	870	935	119	353	2
59	584	878	510	490	1	59	891	.89988	113	334	1
60	.65606	.86929	1.1504	.75471	0	60	.66913	.90040	1.1106	.74314	0
	cos	cot	tan	sin			cos	cot	tan	sin	
49°						48°					

AIR NAVIGATION TABLES

Table I. Natural Trigonometric Functions—Continued

42°

	sin	tan	cot	cos	
0	.66913	.90040	1.1106	.74314	60
1	935	093	100	295	59
2	956	146	093	276	58
3	978	199	087	256	57
4	.66999	251	080	237	56
5	.67021	304	074	217	55
6	043	357	067	198	54
7	064	410	061	178	53
8	086	463	1.1054	.74159	52
9	107	.90516	048	139	51
10	129	569	041	120	50
11	151	621	035	100	49
12	172	674	028	080	48
13	.67194	727	022	061	47
14	215	781	016	041	46
15	237	834	009	022	45
16	258	887	1.1003	.74002	44
17	280	940	1.0996	.73983	43
18	301	.90993	990	963	42
19	323	.91046	983	944	41
20	.67344	099	977	924	40
21	366	153	971	904	39
22	387	206	964	885	38
23	409	259	958	865	37
24	430	313	951	846	36
25	452	366	1.0945	.73826	35
26	473	419	939	806	34
27	495	473	932	787	33
28	.67516	.91526	926	767	32
29	538	580	919	747	31
30	559	633	913	728	30
31	580	687	907	708	29
32	602	740	900	688	28
33	623	794	894	669	27
34	645	847	1.0888	.73649	26
35	.67666	901	881	629	25
36	688	.91955	875	610	24
37	709	.92008	869	590	23
38	730	062	862	570	22
39	752	116	856	551	21
40	773	170	850	531	20
41	795	224	843	511	19
42	816	277	1.0837	.73491	18
43	.67837	331	831	472	17
44	859	385	824	452	16
45	880	439	818	432	15
46	901	.92493	812	413	14
47	923	547	805	393	13
48	944	601	799	373	12
49	965	655	793	353	11
50	.67987	709	786	333	10
51	.68008	763	1.0780	.73314	9
52	029	817	774	294	8
53	051	872	768	274	7
54	.072	926	761	254	6
55	093	.92980	755	234	5
56	115	.93034	749	215	4
57	136	088	742	195	3
58	157	143	736	175	2
59	179	197	730	155	1
60	.68200	.93252	1.0724	.73135	0
	cos	cot	tan	sin	

47°

43°

	sin	tan	cot	cos	
0	.68200	.93252	1.0724	.73135	60
1	221	306	717	116	59
2	242	360	711	096	58
3	264	415	705	076	57
4	285	469	699	056	56
5	306	524	692	036	55
6	327	.93578	686	.73016	54
7	349	633	680	.72996	53
8	370	688	674	976	52
9	.68391	742	668	957	51
10	412	797	1.0661	937	50
11	.434	852	655	917	49
12	455	906	649	897	48
13	476	.93961	643	877	47
14	497	.94016	637	857	46
15	518	071	630	.72837	45
16	539	125	624	817	44
17	561	180	618	797	43
18	.68582	235	612	777	42
19	603	290	606	757	41
20	624	345	1.0599	737	40
21	645	400	593	717	39
22	666	455	587	697	38
23	688	.94510	581	.72677	37
24	709	565	575	657	36
25	730	620	569	637	35
26	751	676	562	617	34
27	.68772	731	556	597	33
28	793	786	550	577	32
29	814	841	544	557	31
30	835	896	1.0538	537	30
31	857	.94952	532	517	29
32	878	.95007	526	.72497	28
33	899	062	519	477	27
34	920	118	513	457	26
35	941	173	507	437	25
36	962	229	501	417	24
37	.68983	284	495	397	23
38	.69004	340	489	377	22
39	025	395	483	357	21
40	046	451	1.0477	337	20
41	067	.95506	470	.72317	19
42	088	562	464	297	18
43	109	618	458	277	17
44	130	673	452	257	16
45	.69151	729	446	236	15
46	172	785	440	216	14
47	193	841	434	196	13
48	214	897	428	.72176	12
49	235	.95952	422	156	11
50	256	.96008	1.0416	136	10
51	277	064	410	116	9
52	.69298	120	404	095	8
53	319	176	398	075	7
54	340	232	392	055	6
55	361	288	385	035	5
56	382	344	379	.72015	4
57	403	400	373	.71995	3
58	424	457	367	974	2
59	445	513	361	954	1
60	.69466	.96569	1.0355	.71934	0
	cos	cot	tan	sin	

46°

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Table I.
Natural Trigonometric Functions—Continued
44°

	sin	tan	cot	cos	
0	.69466	.96569	1.0355	.71934	60
1	487	625	349	914	59
2	508	681	343	894	58
3	529	738	337	873	57
4	549	794	331	853	56
5	570	850	325	833	55
6	591	907	319	813	54
7	.69612	.96963	313	792	53
8	633	.97020	307	772	52
9	654	076	301	.71752	51
10	675	133	1.0295	732	50
11	696	189	289	711	49
12	717	246	283	691	48
13	737	302	277	671	47
14	758	359	271	650	46
15	779	416	265	630	45
16	.69800	.97472	259	610	44
17	821	529	253	590	43
18	842	586	247	.71569	42
19	862	643	241	549	41
20	883	700	1.0235	529	40
21	904	756	230	508	39
22	925	813	224	488	38
23	946	870	218	468	37
24	966	927	212	447	36
25	.69987	.97984	206	427	35
26	.70008	.98041	200	407	34
27	029	098	194	.71386	33
28	049	155	188	366	32
29	070	213	182	345	31
30	091	270	1.0176	325	30
31	112	327	170	305	29
32	132	384	164	284	28
33	153	441	158	264	27
34	.70174	.98499	152	243	26
35	195	556	147	223	25
36	215	613	141	.71203	24
37	236	671	135	182	23
38	257	728	129	162	22
39	277	786	123	141	21
40	298	843	1.0117	121	20
41	319	901	111	100	19
42	.70339	.98958	105	080	18
43	360	.99016	099	059	17
44	381	073	094	039	16
45	401	131	088	.71019	15
46	422	189	082	.70998	14
47	443	247	076	978	13
48	463	304	070	957	12
49	484	362	064	937	11
50	505	420	1.0058	916	10
51	.70525	.99478	052	896	9
52	546	536	047	875	8
53	567	594	041	.70855	7
54	587	652	035	834	6
55	608	710	029	813	5
56	628	768	023	793	4
57	649	826	017	772	3
58	670	884	012	752	2
59	690	.99942	006	731	1
60	.70711	1.0000	1.0000	.70711	0

45°

	cos	cot	tan	sin	
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AIR NAVIGATION TABLES

Table II. COMMON LOGARITHMS OF NUMBERS ²

Introduction. The power L to which a given number b must be raised to produce a number N is called the logarithm of N to the base b . This relation expressed in symbols is

$$b^L = N.$$

It appears at once that b must not be unity and it must not be negative. In the following set of tables, 10 is used as base.

Characteristic and mantissa. The common logarithm of any real, positive number may be written as an integer, positive or negative, plus a positive decimal fraction. The integral part is called the *characteristic* and the decimal part the *mantissa*. The characteristic may be written by using the following rules:

RULE 1: The characteristic of the common logarithm of a number greater than 1 is obtained by subtracting 1 from the number of digits to the left of the decimal point.

For example, 68.30 has two digits to the left of its decimal point; hence its characteristic is $2-1=1$. Similarly for 6830, the characteristic is $4-1=3$, for 7.864 it is $1-1=0$, and for 5846300 it is 6.

RULE 2: The characteristic of the common logarithm of a positive number less than 1 is negative and its magnitude is obtained by adding 1 to the number of zeros immediately following the decimal point.

If the characteristic of a number is $-n$ (n positive), it should be written in the form $(10-n)-10$. To obtain directly the logarithm of a number less than 1, subtract from 9 the number of zeros immediately following the decimal point, and write the result before the mantissa and -10 after it.

For example, 0.000785 has three zeros immediately following the decimal point; hence its characteristic is $-(3+1)=-4$, or $6-10$. Similarly for 0.0000587 the characteristic is $-(4+1)=-5$ or $5-10$, for 0.0287 it is -2 or $8-10$, and for 0.684 it is -1 or $9-10$.

To find the mantissa—special case. The mantissa, or decimal part of the logarithm of a number, depends only on the sequence of the digits and not on the position of the decimal point. Table II lists the mantissas, accurate to five decimal places, of the logarithms of all integers from 1 to 10,000.

The change in the mantissas of the logarithms is very slow. Consequently the first two digits of the mantissas have been omitted from a large percentage of entries. When these two digits are omitted from an entry, they always appear in the column containing the entry both slightly above it and also slightly below it.

To find the mantissa of the logarithm of a number locate the first three digits of this number in the left-hand column headed *No.*, and the fourth digit in the row at the top of the page. Then the mantissa of the given number containing four significant figures is in the row whose first three figures are the first three significant figures of the given number, and in the column headed by the fourth. Thus to find the logarithm of 76.64 find 766 in the column headed *No.*, and follow the corresponding row to the entry in the column headed by 4. This entry 88446 represents the mantissa required. The first two digits 88 of the mantissa were found in the same column with the considered entry but one space lower, and also in the same column, but seven spaces higher.

Hence, we have

$$\log 76.64 = 1.88446.$$

Interpolation. When a number contains a fifth significant figure, we find the logarithm corresponding to the first four figures as above and then add an increment obtained by a process called interpolation. This process is based on the assumption that for relatively small changes in the number N the changes in $\log N$ are proportional to the changes in N . The following example will serve to illustrate the process of interpolation.

² The following table of common logarithms of numbers and explanation thereto have been prepared and copyrighted by Lyman M. Kells, Willis F. Kern, and James R. Bland, who have supplied them to the Army Air Forces for use in this publication. Neither the table nor any new feature embodied therein may be reproduced in any form without the permission of the copyright owners.

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The expression *tabular difference* will be used frequently in what follows. The tabular difference, when used in connection with a table, means the result of subtracting the lesser of two successive entries from the greater. These differences have been computed in every case and tabulated in the columns headed "d".

Example. Find $\log 235.47$.

Solution. We first find the logarithms in the following form and then compute the difference indicated:

$$\left. \begin{array}{l} \log 235.40 \\ \log 235.47 \\ \log 235.50 \end{array} \right\} \begin{array}{l} 7 \\ 10 \\ 18 \end{array} \left. \begin{array}{l} = 2.37181 \\ = ? \\ = 2.37199 \end{array} \right\} d \left. \begin{array}{l} \\ \\ \end{array} \right\} 18 \text{ (tabular difference)}$$

By the principle of proportional parts, we have

$$\frac{7}{10} = \frac{d}{18}, \text{ or } d = \frac{7}{10}(18) = 12.6 = 13 \text{ (nearly)}$$

Adding 0.00013 to 2.37181, we obtain

$$\log 235.47 = 2.37194$$

The increment 12.6 was rounded off to 13 because we are not justified in writing more than five decimal places in the mantissa.

The essence of this procedure is embodied in the following statement. *To find the logarithm of a number composed of five significant figures, first find the logarithm corresponding to the first four figures and to it add one-tenth of the tabular difference multiplied by the fifth digit.*

To shorten the process of interpolation, 10^5 times each tabular difference occurring in the table has been multiplied by 0.1, 0.2, . . . 0.9, and the results have been tabulated on the right-hand sides of the pages on which these differences occur. The abbreviation "Prop. Parts" written at the top of the page over these small tables abbreviates the words *proportional parts*. To interpolate in the example just solved, note the tabular difference 18, locate the Prop. Parts table headed 18 and find opposite 7 in its left-hand column the entry 13. In general, this difference should not be computed but should be obtained from the number opposite the fifth digit in the appropriate table of proportional parts.

To find the number corresponding to a given logarithm. If $\log N = L$, the number N is called the *antilogarithm* of L . The sequence of digits of a number N corresponding to a given logarithm L is found from its mantissa, and the decimal point is then placed in accordance with the italicized rules stated above.

Example. Given $\log N = 1.92955$, find N .

Solution. The mantissa .92955 lies between the entries .92952 and .92957 of Table 32. Using the table and computing the differences indicated, we write the following form:

$$\left. \begin{array}{l} 1.92952 \\ 1.92955 \\ 1.92957 \end{array} \right\} \begin{array}{l} 3 \\ 5 \\ 10 \end{array} \left. \begin{array}{l} = \log 85.020 \\ = \log N \\ = \log 85.030 \end{array} \right\} x \left. \begin{array}{l} \\ \\ \end{array} \right\} 10$$

Assuming that changes in the logarithm are proportional to the corresponding changes in the number, we write

$$\frac{3}{5} = \frac{x}{10}, \text{ or } x = 10\left(\frac{3}{5}\right) = 6$$

Hence

$$N = 85.026$$

The essence of the process of interpolation is indicated in the foregoing procedure. However, in practice, the student should always interpolate by using the table of proportional parts. The fifth figure 6 should have been obtained from the table of proportional parts. In the small Prop. Parts table corresponding to the tabular difference 5, we read either 5 or 6 in the left-hand column opposite the entry 3. However, the 6 must be chosen; for in case there is a choice between two or more entries one of which is opposite a number printed in **boldface**, give preference to the entry opposite the **boldfaced** figure.

RULE: *Whenever a number lying exactly halfway between two entries is under consideration or is the same as two or more adjacent entries, give preference to that character which has a boldfaced part nearest the entry.*

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Table II. Logarithms of Numbers

100

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
100	00000	43	00043	44	00087	43	00130	43	00173	44	00217	43	00260	43	00303	43	00346	43	00389	43	0
101	432	43	475	43	518	43	561	43	00604	43	00647	42	00689	43	00732	43	00775	42	00817	43	1
102	00860	43	00903	42	00945	43	00988	42	01030	42	01072	43	01115	42	01157	42	01199	43	01242	42	2
103	01284	42	01326	42	01368	42	01410	42	452	42	494	42	536	42	578	42	01620	42	01662	41	3
104	01703	42	01745	42	01787	41	01828	42	01870	42	01912	41	01953	42	01995	41	02036	42	02078	41	4
105	02119	41	02160	42	02202	41	02243	41	02284	41	02325	41	02366	41	02407	42	449	41	490	41	5
106	531	41	572	40	02612	41	02653	41	02694	41	02735	41	02776	40	02816	41	02857	41	02898	40	6
107	02938	41	02979	40	03019	41	03060	40	03100	41	03141	40	03181	41	03222	40	03262	40	03302	40	7
108	03342	41	03383	40	423	40	463	40	503	40	543	40	583	40	03623	40	03663	40	03703	40	8
109	03743	39	03782	40	03822	40	03862	40	03902	39	03941	40	03981	40	04021	39	04060	40	04100	39	9
110	04139	40	04179	39	04218	40	04258	39	04297	39	04336	40	04376	39	415	39	454	39	493	39	10
111	532	39	571	39	610	40	04650	39	04689	38	04727	39	04766	39	04805	39	04844	39	04883	39	0
112	04922	39	04961	38	04999	39	05038	39	05077	38	05115	39	05154	38	05192	39	05231	38	05269	39	1
113	05308	38	05346	39	05385	38	423	38	461	39	500	38	538	38	576	38	614	38	05652	38	2
114	05690	39	05729	38	05767	38	05805	38	05843	38	05881	37	05918	38	05956	38	05994	38	06032	38	3
115	06070	38	06108	37	06145	38	06183	38	06221	37	06258	38	06296	37	06333	38	06371	37	408	38	4
116	446	37	483	38	521	37	558	37	595	38	06633	37	06670	37	06707	37	06744	37	06781	38	5
117	06819	37	06856	37	06893	37	06930	37	06967	37	07004	37	07041	37	07078	37	07115	36	07151	37	6
118	07188	37	07225	37	07262	36	07298	37	07335	36	372	36	408	37	445	37	482	36	518	37	7
119	555	36	591	37	628	36	07664	36	07700	37	07737	36	07773	36	07809	37	07846	36	07882	36	8
120	07918	36	07954	36	07990	37	08027	36	08063	36	08099	36	08135	36	08171	36	08207	36	08243	36	9
121	08279	35	08314	36	08350	36	386	36	422	36	458	35	493	36	529	36	565	35	600	36	10
122	636	36	08672	35	08707	36	08743	35	08778	36	08814	35	08849	35	08884	36	08920	35	08955	36	1
123	08991	35	09026	35	09061	35	09096	36	09132	35	09167	35	09202	35	09237	35	09272	35	09307	35	2
124	09342	35	377	35	412	35	447	35	482	35	517	35	552	35	587	34	621	35	09656	35	3
125	09691	35	09726	34	09760	35	09795	35	09830	34	09864	35	09899	36	09934	34	09968	35	10003	34	4
126	10037	35	10072	34	10106	34	10140	35	10175	34	10209	34	10243	35	10278	34	10312	34	346	34	5
127	380	35	415	34	449	34	483	34	517	34	551	34	585	34	619	34	653	34	10687	34	6
128	10721	34	10755	34	10789	34	10823	34	10857	33	10890	34	10924	34	10958	34	10992	33	11025	34	7
129	11059	34	11093	33	11126	34	11160	33	11193	34	11227	34	11261	33	11294	33	11327	34	361	33	8
130	394	34	428	33	461	33	494	34	528	33	561	33	594	34	628	33	661	33	11694	33	9
131	11727	33	11760	33	11793	33	11826	34	11860	33	11893	33	11926	33	11959	33	11992	32	12024	33	10
132	12057	33	12090	33	12123	33	12156	33	12189	33	12222	32	12254	33	12287	33	12320	32	352	33	11
133	385	33	418	32	450	33	483	33	516	32	548	33	581	32	613	33	646	32	12678	32	12
134	12710	33	12743	32	12775	33	12808	32	12840	32	12872	33	12905	32	12937	32	12969	32	13001	32	13
135	13033	33	13066	32	13098	32	13130	32	13162	32	13194	32	13226	32	13258	32	13290	32	322	32	14
136	354	32	386	32	418	32	450	31	481	32	513	32	545	32	577	32	609	31	640	32	15
137	672	32	13704	31	13735	32	13767	32	13799	31	13830	32	13862	31	13893	32	13925	31	13956	32	16
138	13988	31	14019	32	14051	31	14082	32	14114	31	14145	31	14176	32	14208	31	14239	31	14270	31	17
139	14301	32	333	31	364	31	395	31	426	31	457	32	489	31	520	31	551	31	582	31	18
140	613	31	644	31	675	31	14706	31	14737	31	14768	31	14799	30	14829	31	14860	31	14891	31	19
141	14922	31	14953	30	14983	31	15014	31	15045	31	15076	30	15106	31	15137	31	15168	30	15198	31	20
142	15229	30	15259	31	15290	30	320	31	351	30	381	31	412	30	442	31	473	30	503	31	21
143	534	30	564	30	594	31	625	30	655	30	685	30	15715	31	15746	30	15776	30	15806	30	22
144	15836	30	15866	31	15897	30	15927	30	15957	30	15987	30	16017	30	16047	30	16077	30	16107	30	23
145	16137	30	16167	30	16197	30	16227	29	16256	30	16286	30	316	30	346	30	376	30	406	29	24
146	435	30	465	30	495	29	524	30	554	30	584	29	613	30	643	30	673	29	702	30	25
147	16732	29	16761	30	16791	29	16820	30	16850	29	16879	30	16909	29	16938	29	16967	30	16997	29	26
148	17026	30	17056	29	17085	29	17114	29	17143	30	17173	29	17202	29	17231	29	17260	30	17289	30	27
149	319	29	348	29	377	29	406	29	435	29	464	29	493	29	522	29	551	29	580	29	28
150	17609	29	17638	29	17667	29	17696	29	17725	29	17754	28	17782	29	17811	29	17840	29	17869	29	29
No.	0		1		2		3		4		5		6		7		8		9		30
																					31
																					32

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

150

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
																					31 30
150	17609	29	17638	29	17667	29	17696	29	17725	29	17754	29	17782	29	17811	29	17840	29	17869	29	0 0 0
151	17898	28	17926	29	17955	29	17984	29	18013	28	18041	29	18070	29	18099	28	18127	29	18156	28	1 3 3
152	18184	29	18213	28	18241	29	18270	28	298	29	327	28	355	29	384	28	412	29	441	28	2 6 6
153	469	29	498	28	526	28	554	29	583	28	611	28	639	28	667	29	696	28	18724	28	3 9 9
154	18752	28	18780	28	18808	29	18837	28	18865	28	18893	28	18921	28	18949	28	18977	28	19005	28	4 12 12
																					5 16 15
155	19033	28	19061	28	19089	28	19117	28	19145	28	19173	28	19201	28	19229	28	19257	28	285	27	6 19 18
156	312	28	340	28	368	28	396	28	424	27	451	28	479	28	507	28	535	27	562	28	7 22 21
157	590	28	618	27	645	28	673	27	700	28	728	28	756	27	783	28	19811	27	19838	28	8 25 24
158	19866	27	19893	28	19921	27	19948	28	19976	27	20003	27	20030	28	20058	27	20085	27	20112	28	9 28 27
159	20140	27	20167	27	20194	28	20222	27	20249	27	276	27	303	27	330	28	358	27	385	27	10 31 30
																					29 28
160	412	27	439	27	466	27	493	27	520	28	548	27	575	27	602	27	629	27	656	27	0 0 0
161	683	27	710	27	737	26	763	27	790	27	817	27	844	27	871	27	898	27	925	27	1 3 3
162	20952	26	20978	27	21005	27	21032	27	21059	26	21085	27	21112	27	21139	26	21165	27	21192	27	2 6 6
163	21219	26	21245	27	272	27	299	26	325	27	352	26	378	27	405	26	431	27	458	26	3 9 8
164	484	27	511	26	537	27	564	26	590	27	617	26	643	26	669	27	696	26	722	26	4 12 11
																					5 15 14
165	21748	27	21775	26	21801	26	21827	27	21854	26	21880	26	21906	26	21932	26	21958	27	21985	26	6 17 17
166	22011	26	22037	26	22063	26	22089	26	22115	26	22141	26	22167	27	22194	26	22220	26	22246	26	7 20 20
167	272	26	298	26	324	26	350	26	376	25	401	26	427	26	453	26	479	26	505	26	8 23 22
168	531	26	557	26	583	25	608	26	634	26	660	26	686	26	712	25	737	26	22763	26	9 26 25
169	22789	25	22814	26	22840	26	22866	25	22891	26	22917	26	22943	25	22968	26	22994	25	23019	26	10 29 28
																					27 26
170	23045	25	23070	26	23096	25	23121	26	23147	25	23172	26	23198	25	23223	26	23249	25	274	26	0 0 0
171	300	25	325	25	350	26	376	25	401	25	426	26	452	25	477	25	502	26	528	25	1 3 3
172	553	25	578	25	603	26	629	25	654	25	679	25	704	25	729	25	23754	25	23779	26	2 6 6
173	23805	25	23830	25	23855	25	23880	25	23905	25	23930	25	23955	25	23980	25	24005	25	24030	25	3 9 9
174	24055	25	24080	25	24105	25	24130	25	24155	25	24180	24	24204	25	24229	25	254	25	279	25	4 12 13
																					5 16 16
175	304	25	329	24	353	25	378	25	403	25	428	24	452	25	477	25	502	25	527	24	6 19 18
176	551	25	576	25	601	24	625	25	650	24	674	25	699	25	724	24	748	25	24773	24	7 22 21
177	24797	24	24822	24	24846	25	24871	24	24895	25	24920	24	24944	25	24969	24	24993	25	25018	24	8 25 24
178	25042	24	25066	25	25091	24	25115	24	25139	25	25164	24	25188	24	25212	25	25237	24	261	24	0 0 0
179	285	25	310	24	334	24	358	24	382	24	406	25	431	24	455	24	479	24	503	24	1 3 3
																					2 6 6
180	527	24	551	24	575	25	600	24	624	24	648	24	672	24	696	24	720	24	744	24	3 9 8
181	25768	24	25792	24	25816	24	25840	24	25864	24	25888	24	25912	23	25935	24	25959	24	25983	24	4 12 10
182	26007	24	26031	24	26055	24	26079	23	26102	24	26126	24	26150	24	26174	24	26198	23	26221	24	5 13 12
183	245	24	269	24	293	23	316	24	340	24	364	23	387	24	411	24	435	23	458	24	6 15 14
184	482	23	505	24	529	24	553	23	576	24	600	23	623	24	647	23	670	24	694	23	7 18 17
																					8 20 19
185	717	24	741	23	764	24	26788	23	26811	23	26834	24	26858	23	26881	24	26905	23	26928	23	9 23 22
186	26951	24	26975	23	26998	23	27021	24	27045	23	27068	23	27091	23	27114	24	27138	23	27161	23	10 25 24
187	27184	23	27207	24	27231	23	254	23	277	23	300	23	323	23	346	24	370	23	393	23	23 22
188	416	23	439	23	462	23	485	23	508	23	531	23	554	23	577	23	600	23	623	23	0 0 0
189	646	23	669	23	692	23	715	23	738	23	761	23	778	23	784	23	7830	22	7852	23	1 2 4
																					2 5 4
190	27875	23	27898	23	27921	23	27944	23	27967	22	27989	23	28012	23	28035	23	28058	23	28081	22	3 7 7
191	28103	23	28126	23	28149	22	28171	23	28194	23	28217	23	28240	22	28262	23	28285	22	28307	23	4 9 9
192	330	23	353	22	375	23	398	23	421	22	443	23	466	22	488	23	511	22	533	23	5 12 11
193	556	22	578	23	601	22	623	23	646	22	668	23	691	22	713	22	735	23	758	22	6 14 13
194	28780	23	28803	22	28825	22	28847	23	28870	22	28892	23	28914	23	28937	22	28959	22	28981	22	7 16 15
																					8 18 18
195	29003	23	29026	22	29048	22	29070	22	29092	22	29115	22	29137	22	29159	22	29181	22	29203	23	9 21 20
196	226	22	248	22	270	22	292	22	314	22	336	22	358	22	380	22	403	22	425	22	10 23 22
197	447	22	469	22	491	22	513	22	535	22	557	22	579	22	601	22	623	22	645	22	0 0 0
198	667	21	688	22	710	22	732	22	754	22	776	22	29798	22	29820	22	29842	21	29863	22	1 2 4
199	29885	22	29907	22	29929	22	29951	22	29973	21	29994	22	30016	22	30038	22	30060	21	30081	22	2 5 4
																					3 6 6
200	30103	22	30125	21	30146	22	30168	22	30190	21	30211	22	30233	22	30255	21	30276	22	30298	22	4 8 8
																					5 11 11
No.	0		1		2		3		4		5		6		7		8		9		6 13 13
																					7 15 15
																					8 17 17
																					9 19 19
																					10 21 21

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

200

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
200	30103	22	30125	21	30146	22	30168	22	30190	21	30211	22	30233	22	30255	21	30276	22	30298	22	0
201	320	21	341	22	363	21	384	22	406	22	428	21	449	22	471	21	492	22	514	21	1
202	535	22	557	21	578	22	600	21	621	22	643	21	664	22	685	21	707	22	728	21	2
203	750	21	771	22	792	21	814	22	835	21	856	22	878	21	899	22	920	21	942	22	3
204	30963	21	30984	22	31006	21	31027	22	31048	21	31069	22	31091	21	31112	22	31133	21	31154	22	4
205	31175	22	31197	21	218	21	239	21	260	21	281	21	302	21	323	22	345	21	366	21	5
206	387	21	408	21	429	21	450	21	471	21	492	21	513	21	534	21	555	21	576	21	6
207	597	21	618	21	639	21	660	21	681	21	702	21	723	21	744	21	765	21	785	21	7
208	31806	21	31827	21	31848	21	31869	21	31890	21	31911	20	31931	21	31952	21	31973	21	31994	21	8
209	32015	20	32035	21	32056	21	32077	21	32098	20	32118	21	32139	21	32160	21	32181	20	32201	21	9
210	222	21	243	20	263	21	284	21	305	20	325	21	346	20	366	21	387	21	408	20	10
211	428	21	449	20	469	21	490	20	510	21	531	21	552	20	572	21	593	20	613	21	0
212	634	20	654	21	675	20	695	20	715	21	736	20	756	21	777	20	797	21	818	20	1
213	32838	20	32858	21	32879	20	32899	20	32919	21	32940	20	32960	21	32980	20	33001	21	33021	20	2
214	33041	21	33062	20	33082	21	33102	20	33122	21	33143	20	33163	21	33183	20	203	21	224	20	3
215	244	20	264	20	284	20	304	21	325	20	345	20	365	20	385	20	405	20	425	20	4
216	445	20	465	21	486	20	506	20	526	20	546	20	566	20	586	20	606	20	626	20	5
217	646	20	666	20	686	20	706	20	726	20	746	20	766	20	786	20	33806	20	33826	20	6
218	33846	20	33866	19	33885	20	33905	20	33925	20	33945	20	33965	20	33985	20	34005	20	34025	19	7
219	34044	20	34064	20	34084	20	34104	20	34124	19	34143	20	34163	20	34183	20	203	20	223	19	8
220	242	20	262	20	282	19	301	20	321	20	341	20	361	19	380	20	400	20	420	19	9
221	439	20	459	20	479	19	498	20	518	19	537	20	557	20	577	19	596	20	616	19	10
222	635	20	655	19	674	20	694	19	713	20	733	19	753	19	772	20	792	19	811	20	0
223	34830	20	34850	19	34869	20	34889	20	34908	19	34928	20	34947	19	34967	20	34986	19	35005	20	1
224	35025	19	35044	20	35064	19	35083	19	35102	20	35122	19	35141	19	35160	20	35180	19	199	19	2
225	218	20	238	19	257	19	276	19	295	20	315	19	334	19	353	19	372	20	392	19	3
226	411	19	430	19	449	19	468	20	488	19	507	19	526	19	545	19	564	19	583	20	4
227	603	19	622	19	641	19	660	19	679	19	698	19	717	19	736	19	755	19	774	19	5
228	793	20	35813	19	35832	19	35851	19	35870	19	35889	19	35908	19	35927	19	35946	19	35965	19	6
229	35984	19	36003	18	36021	19	36040	19	36059	19	36078	19	36097	19	36116	19	36135	19	36154	19	7
230	36173	19	192	18	211	18	229	19	248	19	267	19	286	19	305	19	324	18	342	19	8
231	361	19	380	19	399	19	418	18	436	19	455	19	474	19	493	18	511	19	530	19	9
232	549	19	568	18	586	19	605	19	624	18	642	19	661	19	680	18	698	19	717	19	10
233	736	18	754	19	773	18	791	19	810	19	829	18	847	19	866	18	884	19	903	19	0
234	36922	18	36940	19	36959	18	36977	19	36996	18	37014	19	37033	18	37051	19	37070	18	37088	19	1
235	37107	18	37125	19	37144	18	37162	19	37181	18	199	19	218	18	236	18	254	19	273	18	2
236	291	19	310	18	328	18	346	19	365	18	383	18	401	19	420	18	438	19	457	18	3
237	475	18	493	18	511	19	530	18	548	18	566	19	585	18	603	18	621	18	639	19	4
238	658	18	676	18	694	18	712	19	731	18	749	18	767	18	785	18	803	19	822	18	5
239	37840	18	37858	18	37876	18	37894	18	37912	19	37931	18	37949	18	37967	18	37985	18	38003	18	6
240	38021	18	38039	18	38057	18	38075	18	38093	19	38112	18	38130	18	38148	18	38166	18	184	18	7
241	202	18	220	18	238	18	256	18	274	18	292	18	310	18	328	18	346	18	364	18	8
242	382	17	399	18	417	18	435	18	453	18	471	18	489	18	507	18	525	18	543	18	9
243	561	17	578	18	596	18	614	18	632	18	650	18	668	17	686	17	703	18	721	18	10
244	739	18	757	18	775	17	792	18	810	18	828	18	846	17	863	18	881	18	899	18	0
245	38917	17	38934	18	38952	18	38970	17	38987	18	39005	18	39023	18	39041	17	39058	18	39076	18	1
246	39094	17	39111	18	39129	17	39146	18	39164	18	182	17	199	18	217	18	235	17	252	18	2
247	270	17	287	18	305	17	322	18	340	18	358	17	375	18	393	17	410	18	428	17	3
248	445	18	463	17	480	18	498	17	515	18	533	17	550	18	568	17	585	17	602	18	4
249	620	17	637	18	655	17	672	18	690	17	707	17	724	18	742	17	759	18	777	17	5
250	39794	17	39811	18	39829	17	39846	17	39863	18	39881	17	39898	18	39915	18	39933	17	39950	17	6
No.	0		1		2		3		4		5		6		7		8		9		7

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

250

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
250	39794	17	39811	18	39829	17	39846	17	39863	18	39881	17	39898	17	39915	18	39933	17	39950	17	0
251	39967	18	39985	17	40002	17	40019	18	40037	17	40054	17	40071	17	40088	18	40106	17	40123	17	1
252	40140	17	40157	18	175	17	192	17	209	17	226	17	243	18	261	17	278	17	295	17	2
253	312	17	329	17	346	18	364	17	381	17	398	17	415	17	432	17	449	17	466	17	3
254	483	17	500	18	518	17	535	17	552	17	569	17	586	17	603	17	620	17	637	17	4
255	654	17	671	17	688	17	705	17	722	17	739	17	756	17	773	17	790	17	807	17	5
256	824	17	40841	17	40858	17	40875	17	40892	17	40909	17	40926	17	40943	17	40960	16	40976	17	6
257	40993	17	41010	17	41027	17	41044	17	41061	17	41078	17	41095	16	41111	17	41128	17	41145	17	7
258	41162	17	179	17	196	16	212	17	229	17	246	17	263	17	280	16	296	17	313	17	8
259	330	17	347	16	363	17	380	17	397	17	414	16	430	17	447	17	464	17	481	16	9
260	497	17	514	17	531	16	547	17	564	17	581	16	597	17	614	17	631	16	647	17	10
261	664	17	681	16	697	17	714	17	731	16	747	17	764	16	780	17	797	17	814	16	1
262	830	17	41847	16	41863	17	41880	16	41896	17	41913	16	41929	17	41946	17	41963	16	41979	17	2
263	41996	16	42012	17	42029	16	42045	17	42062	16	42078	17	42095	16	42111	16	42127	17	42144	16	3
264	42160	17	177	16	193	17	210	16	226	17	243	16	259	16	275	17	292	16	308	17	4
265	325	16	341	16	357	17	374	16	390	16	406	17	423	16	439	16	455	17	472	16	5
266	488	16	504	17	521	16	537	16	553	17	570	16	586	16	602	17	619	16	635	16	6
267	651	16	667	17	684	16	700	16	716	16	732	17	749	16	765	16	781	16	797	16	7
268	813	17	830	16	42846	16	42862	16	42878	17	42894	16	42911	16	42927	16	42943	16	42959	16	8
269	42975	16	42991	17	43008	16	43024	16	43040	16	43056	16	43072	16	43088	16	43104	16	43120	16	9
270	43136	16	43152	17	169	16	185	16	201	16	217	16	233	16	249	16	265	16	281	16	0
271	297	16	313	16	329	16	345	16	361	16	377	16	393	16	409	16	425	16	441	16	1
272	457	16	473	16	489	16	505	16	521	16	537	16	553	16	569	15	584	16	600	16	2
273	616	16	632	16	648	16	664	16	680	16	696	16	712	15	727	16	743	16	759	16	3
274	775	16	791	16	807	16	823	15	838	16	43854	16	43870	16	43886	16	43902	15	43917	16	4
275	43933	16	43949	16	43965	16	43981	15	43996	16	44012	16	44028	16	44044	15	44059	16	44075	16	5
276	44091	16	44107	15	44122	16	44138	16	44154	16	170	15	185	16	201	16	217	15	232	16	6
277	248	16	264	15	279	16	295	16	311	15	326	16	342	16	358	15	373	16	389	15	7
278	404	16	420	16	436	15	451	16	467	16	483	15	498	16	514	15	529	16	545	15	8
279	560	16	576	16	592	15	607	16	623	15	638	16	654	15	669	16	685	15	700	16	9
280	716	15	731	16	747	15	762	16	778	15	793	16	809	15	824	16	840	15	44855	16	10
281	44871	15	44886	16	44902	15	44917	15	44932	16	44948	15	44963	16	44979	15	44994	16	45010	15	1
282	45025	15	45040	16	45056	15	45071	15	45086	16	45102	15	45117	16	45133	15	45148	15	163	16	2
283	179	15	194	15	209	16	225	15	240	15	255	16	271	15	286	16	301	16	317	15	3
284	332	15	347	15	362	16	378	15	393	15	408	15	423	16	439	15	454	15	469	15	4
285	484	16	500	15	515	15	530	15	545	16	561	15	576	15	591	15	606	15	621	16	5
286	637	15	652	15	667	15	682	15	697	15	712	16	728	15	743	15	758	15	773	15	6
287	788	15	803	15	818	16	834	15	45849	15	45864	15	45879	15	45894	15	45909	15	45924	15	7
288	45939	15	45954	15	45969	15	45984	16	46000	15	46015	15	46030	15	46045	15	46060	15	46075	15	8
289	46090	15	46105	15	46120	15	46135	15	150	15	165	15	180	15	195	15	210	15	225	15	9
290	240	15	255	15	270	15	285	15	300	15	315	15	330	15	345	14	359	15	374	15	14
291	389	15	404	15	419	15	434	15	449	15	464	15	479	15	494	15	509	14	523	15	1
292	538	15	553	15	568	15	583	15	598	15	613	14	627	15	642	15	657	15	672	15	2
293	687	15	702	14	716	15	731	15	746	15	761	15	776	14	790	15	805	15	820	15	3
294	835	15	850	14	46864	15	46879	15	46894	15	46909	14	46923	15	46938	15	46953	14	46967	15	4
295	46982	15	46997	15	47012	14	47026	15	47041	15	47056	14	47070	15	47085	15	47100	14	47114	15	5
296	47129	15	47144	15	159	14	173	15	188	14	202	15	217	15	232	14	246	15	261	15	6
297	276	14	290	15	305	14	319	15	334	15	349	14	363	15	378	14	392	15	407	15	7
298	422	14	436	15	451	14	465	15	480	14	494	15	509	15	524	14	538	15	553	14	8
299	567	15	582	14	596	15	611	14	625	15	640	14	654	15	669	14	683	15	698	14	9
300	47712	15	47727	14	47741	15	47756	14	47770	14	47784	15	47799	14	47813	15	47828	14	47842	15	13
No.	0		1		2		3		4		5		6		7		8		9		

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

300

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
300	47712	15	47727	14	47741	15	47756	14	47770	14	47784	15	47799	14	47813	15	47828	14	47842	15	15
301	47857	14	47871	14	47885	15	47900	14	47914	15	47929	14	47943	15	47958	14	47972	15	47986	15	
302	48001	14	48015	14	48029	15	48044	14	48058	15	48073	14	48087	15	48101	15	48116	14	48130	14	
303	144	15	159	14	173	14	187	15	202	14	216	14	230	14	244	15	259	14	273	14	0
304	287	15	302	14	316	14	330	14	344	15	359	14	373	14	387	14	401	15	416	14	1
305	430	14	444	14	458	15	473	14	487	14	501	14	515	15	530	14	544	14	558	14	2
306	572	14	586	15	601	14	615	14	629	14	643	14	657	14	671	15	686	14	700	14	3
307	714	14	728	14	742	14	756	14	770	15	785	14	799	14	813	14	827	14	841	14	4
308	855	14	869	14	883	14	897	14	911	15	926	14	940	14	954	14	968	14	982	14	5
309	48996	14	49010	14	49024	14	49038	14	49052	14	49066	14	49080	14	49094	14	49108	14	49122	14	6
310	49136	14	150	14	164	14	178	14	192	14	206	14	220	14	234	14	248	14	262	14	7
311	276	14	290	14	304	14	318	14	332	14	346	14	360	14	374	14	388	14	402	13	8
312	415	14	429	14	443	14	457	14	471	14	485	14	499	14	513	14	527	14	541	13	9
313	554	14	568	14	582	14	596	14	610	14	624	14	638	13	651	14	665	14	679	14	10
314	693	14	707	14	721	13	734	14	748	14	762	14	776	14	790	13	803	14	817	14	11
315	831	14	845	14	859	13	873	14	887	14	900	14	914	13	927	14	941	14	955	14	12
316	49969	13	49982	14	49996	14	50010	14	50024	13	50037	14	50051	14	50065	14	50079	13	50092	14	13
317	50106	14	50120	13	50133	14	147	14	161	13	174	14	188	14	202	13	215	14	229	14	
318	243	13	256	14	270	14	284	13	297	14	311	14	325	13	338	14	352	13	365	14	
319	379	14	393	13	406	14	420	13	433	14	447	14	461	13	474	14	488	13	501	14	
320	515	14	529	13	542	14	556	13	569	14	583	13	596	14	610	13	623	14	637	14	
321	651	13	664	14	678	13	691	14	705	13	718	14	732	13	745	14	759	13	772	14	
322	786	13	799	14	813	13	826	14	840	13	853	14	866	14	880	13	893	14	907	13	
323	50920	14	50934	13	50947	14	50961	13	50974	13	50987	14	51001	13	51014	14	51028	13	51041	13	
324	51055	13	51068	13	51081	14	51095	13	51108	13	51121	14	135	13	148	14	162	13	175	13	
325	188	14	202	13	215	13	228	14	242	13	255	13	268	14	282	13	295	13	308	14	
326	322	13	335	13	348	14	362	13	375	13	388	14	402	13	415	13	428	13	441	14	
327	455	13	468	13	481	14	495	13	508	13	521	13	534	14	548	13	561	13	574	13	
328	587	14	601	13	614	13	627	13	640	14	654	13	667	13	680	13	693	13	706	14	
329	720	13	733	13	746	13	759	13	772	14	786	13	799	13	812	13	825	13	838	13	
330	851	14	865	13	878	13	891	13	904	13	917	13	930	13	943	14	957	13	970	13	
331	51983	13	51996	13	52009	13	52022	13	52035	13	52048	13	52061	14	52075	13	52088	13	52101	13	
332	52114	13	52127	13	140	13	153	13	166	13	179	13	192	13	205	13	218	13	231	13	
333	244	13	257	13	270	14	284	13	297	13	310	13	323	13	336	13	349	13	362	13	
334	375	13	388	13	401	13	414	13	427	13	440	13	453	13	466	13	479	13	492	12	
335	504	13	517	13	530	13	543	13	556	13	569	13	582	13	595	13	608	13	621	13	
336	634	13	647	13	660	13	673	13	686	13	699	12	711	13	724	13	737	13	750	13	
337	763	13	776	13	789	13	802	13	815	12	827	13	840	13	853	13	866	13	879	13	
338	52892	13	52905	12	52917	13	52930	13	52943	13	52956	13	52969	13	52982	12	52994	13	53007	13	
339	53020	13	53033	13	53046	12	53058	13	53071	13	53084	13	53097	13	53110	12	53122	13	135	13	
340	148	13	161	12	173	13	186	13	199	13	212	12	224	13	237	13	250	13	263	12	
341	275	13	288	13	301	13	314	12	326	13	339	13	352	12	364	13	377	13	390	13	
342	403	12	415	13	428	13	441	12	453	13	466	13	479	12	491	13	504	13	517	12	
343	529	13	542	13	555	12	567	13	580	13	593	12	605	13	618	13	631	12	643	13	
344	656	12	668	13	681	13	694	12	706	13	719	13	732	12	744	13	757	12	769	13	
345	782	12	794	13	807	13	820	12	832	13	845	12	857	13	870	12	882	13	895	13	
346	53908	12	53920	13	53933	12	53945	13	53958	12	53970	13	53983	12	53995	13	54008	12	54020	13	
347	54033	12	54045	13	54058	12	54070	13	54083	12	54095	13	54108	12	54120	13	133	12	145	13	
348	158	12	170	13	183	12	195	13	208	12	220	13	233	12	245	13	258	12	270	13	
349	283	12	295	12	307	13	320	12	332	13	345	12	357	13	370	12	382	12	394	13	
350	54407	12	54419	13	54432	12	54444	12	54456	13	54469	12	54481	13	54494	12	54506	12	54518	13	
No.	0		1		2		3		4		5		6		7		8		9		

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

350

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
350	54407	12	54419	13	54432	12	54444	12	54456	13	54469	12	54481	13	54494	12	54506	12	54518	13	13
351	531	12	543	12	555	13	568	12	580	13	593	12	605	12	617	13	630	12	642	12	1
352	654	13	667	12	679	12	691	13	704	12	716	12	728	13	741	12	753	12	765	12	2
353	777	13	790	12	802	12	814	13	827	12	839	12	851	13	864	12	876	12	54888	12	3
354	54900	13	54913	12	54925	12	54937	12	54949	13	54962	12	54974	12	54986	12	54998	13	55011	12	4
355	55023	12	55035	12	55047	13	55060	12	55072	12	55084	12	55096	12	55108	13	55121	12	133	12	5
356	145	12	157	12	169	13	182	12	194	12	206	12	218	12	230	12	242	13	255	12	6
357	267	12	279	12	291	12	303	13	315	13	328	12	340	12	352	12	364	12	376	12	7
358	388	12	400	13	413	12	425	12	437	12	449	12	461	12	473	12	485	12	497	12	8
359	509	13	522	12	534	12	546	12	558	12	570	12	582	12	594	12	606	12	618	12	9
360	630	12	642	12	654	12	666	12	678	13	691	12	703	12	715	12	727	12	739	12	
361	751	12	763	12	775	12	787	12	799	12	811	12	823	12	835	12	847	12	859	12	
362	871	12	55883	12	55895	12	55907	12	55919	12	55931	12	55943	12	55955	12	55967	12	55979	12	
363	55991	12	56003	12	56015	12	56027	11	56038	12	56050	12	56062	12	56074	12	56086	12	56098	12	
364	56110	12	122	12	134	12	146	12	158	12	170	12	182	12	194	11	205	12	217	12	12
365	229	12	241	12	253	12	265	12	277	12	289	12	301	11	312	12	324	12	336	12	1
366	348	12	360	12	372	12	384	12	396	11	407	12	419	12	431	12	443	12	455	12	2
367	467	11	478	12	490	12	502	12	514	12	526	12	538	11	549	12	561	12	573	12	3
368	585	12	597	11	608	12	620	12	632	12	644	12	656	11	667	12	679	12	691	12	4
369	703	11	714	12	726	12	738	12	750	11	761	12	773	12	785	12	797	11	808	12	5
370	820	12	832	12	844	11	855	12	867	12	879	12	56891	11	56902	12	56914	12	56926	11	6
371	56937	12	56949	12	56961	11	56972	12	56984	12	56996	12	57008	11	57019	12	57031	12	57043	11	7
372	57054	12	57066	12	57078	12	57089	12	57101	12	57113	11	124	12	136	12	148	11	159	12	8
373	171	12	183	11	194	12	206	11	217	12	229	12	241	11	252	12	264	12	276	11	9
374	287	12	299	11	310	12	322	12	334	11	345	12	357	11	368	12	380	12	392	11	
375	403	12	415	11	426	12	438	11	449	12	461	12	473	11	484	12	496	11	507	12	
376	519	11	530	12	542	11	553	12	565	11	576	12	588	12	600	11	611	12	623	11	
377	634	12	646	11	657	12	669	11	680	12	692	11	703	12	715	11	726	12	738	11	
378	749	12	761	11	772	12	784	11	795	12	807	11	818	12	830	11	841	11	852	12	
379	864	11	875	12	57887	11	57898	12	57910	12	57921	12	57933	11	57944	11	57955	12	57967	11	11
380	57978	12	57990	11	58001	12	58013	11	58024	11	58035	12	58047	11	58058	12	58070	11	58081	11	1
381	58092	12	58104	11	115	12	127	11	138	11	149	12	161	11	172	12	184	11	195	11	2
382	206	12	218	11	229	11	240	12	252	11	263	11	274	12	286	11	297	12	309	11	3
383	320	11	331	12	343	11	354	11	365	12	377	11	388	11	399	11	410	12	422	11	4
384	433	11	444	12	456	11	467	11	478	12	490	11	501	11	512	12	524	11	535	11	5
385	546	11	557	12	569	11	580	11	591	11	602	12	614	11	625	11	636	11	647	12	6
386	659	11	670	11	681	11	692	12	704	11	715	12	726	11	737	12	749	11	760	11	7
387	771	11	782	12	794	11	805	11	816	11	827	11	838	12	850	11	861	11	872	11	8
388	883	11	58894	12	58906	11	58917	11	58928	11	58939	11	58950	11	58961	12	58973	11	58984	11	9
389	58995	11	59006	11	59017	11	59028	12	59040	11	59051	11	59062	11	59073	11	59084	11	59095	11	10
390	59106	12	118	11	129	11	140	11	151	11	162	11	173	11	184	11	195	12	207	11	
391	218	11	229	11	240	11	251	11	262	11	273	11	284	11	295	11	306	12	318	11	
392	329	11	340	11	351	11	362	11	373	11	384	11	395	11	406	11	417	11	428	11	
393	439	11	450	11	461	11	472	11	483	11	494	12	506	11	517	11	528	11	539	11	
394	550	11	561	11	572	11	583	11	594	11	605	11	616	11	627	11	638	11	649	11	
395	660	11	671	11	682	11	693	11	704	11	715	11	726	11	737	11	748	11	759	11	1
396	770	10	780	11	791	11	802	11	813	11	824	11	835	11	846	11	857	11	868	11	2
397	879	11	890	11	59912	11	59912	11	59923	11	59934	11	59945	11	59956	10	59966	11	59977	11	3
398	59988	11	59999	11	60010	11	60021	11	60032	11	60043	11	60054	11	60065	11	60076	10	60086	11	4
399	60097	11	60108	11	119	11	130	11	141	11	152	11	163	10	173	11	184	11	195	11	5
400	60206	11	60217	11	60228	11	60239	10	60249	11	60260	11	60271	11	60282	11	60293	11	60304	10	6
No.	0		1		2		3		4		5		6		7		8		9		7

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

400

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
400	60206	11	60217	11	60228	11	60239	10	60249	11	60260	11	60271	11	60282	11	60293	11	60304	10	11
401	314	11	325	11	336	11	347	11	358	11	369	10	379	11	390	11	401	11	412	11	1
402	423	10	433	11	444	11	455	11	466	11	477	10	487	11	498	11	509	11	520	11	2
403	531	10	541	11	552	11	563	11	574	10	584	11	595	11	606	11	617	10	627	11	3
404	638	11	649	11	660	10	670	11	681	11	692	11	703	10	713	11	724	11	735	11	4
405	746	10	756	11	767	11	778	10	788	11	799	11	810	11	821	10	831	11	842	11	5
406	853	10	863	11	874	11	885	10	895	11	906	11	917	11	927	11	938	11	949	10	6
407	60959	11	60970	11	60981	10	60991	11	61002	11	61013	10	61023	11	61034	11	61045	10	61055	11	7
408	61066	11	61077	11	61087	11	61098	11	109	10	119	11	130	10	140	11	151	11	162	10	8
409	172	11	183	11	194	10	204	11	215	10	225	11	236	11	247	10	257	11	268	10	9
410	278	11	289	11	300	10	310	11	321	11	331	11	342	10	352	11	363	11	374	10	10
411	384	11	395	10	405	11	416	10	426	11	437	11	448	10	458	11	469	10	479	11	
412	490	10	500	11	511	10	521	11	532	10	542	11	553	10	563	11	574	10	584	11	
413	595	11	606	10	616	11	627	10	637	11	648	10	658	11	669	10	679	11	690	10	
414	700	11	711	10	721	10	731	11	742	10	752	11	763	10	773	11	784	11	794	11	
415	805	10	815	11	826	10	836	11	847	10	857	11	868	10	878	10	888	11	899	10	
416	61909	11	61920	10	61930	11	61941	10	61951	11	61962	10	61972	11	61982	11	61993	10	62003	11	
417	62014	10	62024	11	62034	11	62045	10	62055	11	62066	10	62076	11	62086	11	62097	10	107	11	
418	118	10	128	10	138	11	149	10	159	11	170	10	180	10	190	11	201	10	211	10	
419	221	11	232	10	242	10	252	11	263	10	273	11	284	10	294	10	304	11	315	10	
420	325	10	335	11	346	10	356	10	366	11	377	10	387	10	397	11	408	10	418	10	10
421	428	11	439	10	449	10	459	10	469	11	480	10	490	10	500	11	511	10	521	10	
422	531	11	542	10	552	10	562	10	572	11	583	10	593	10	603	10	613	11	624	10	
423	634	10	644	11	655	10	665	10	675	10	685	11	696	10	706	10	716	10	726	11	1
424	737	10	747	10	757	10	767	11	778	10	788	10	798	10	808	10	818	11	829	10	2
425	839	10	849	10	859	11	870	10	880	10	890	10	900	10	910	11	921	10	931	10	3
426	62941	10	62951	10	62961	11	62972	10	62982	10	62992	10	63002	10	63012	10	63022	11	63033	10	4
427	63043	10	63053	10	63063	10	63073	10	63083	11	63094	10	104	10	114	10	124	10	134	10	5
428	144	11	155	10	165	10	175	10	185	10	195	10	205	10	215	10	225	11	236	10	6
429	246	10	256	10	266	10	276	10	286	10	296	10	306	11	317	10	327	10	337	10	7
430	347	10	357	10	367	10	377	10	387	10	397	10	407	10	417	11	428	10	438	10	8
431	448	10	458	10	468	10	478	10	488	10	498	10	508	10	518	10	528	10	538	10	9
432	548	10	558	10	568	11	579	10	589	10	599	10	609	10	619	10	629	10	639	10	
433	649	10	659	10	669	10	679	10	689	10	699	10	709	10	719	10	729	10	739	10	
434	749	10	759	10	769	10	779	10	789	10	799	10	809	10	819	10	829	10	839	10	
435	849	10	859	10	869	10	879	10	889	10	899	10	909	10	919	10	929	10	939	10	
436	63949	10	63959	10	63969	10	63979	9	63988	10	63998	10	64008	10	64018	10	64028	10	64038	10	
437	64048	10	64058	10	64068	10	64078	10	64088	10	64098	10	108	10	118	10	128	9	137	10	
438	147	10	157	10	167	10	177	10	187	10	197	10	207	10	217	10	227	10	237	9	
439	246	10	256	10	266	10	276	10	286	10	296	10	306	10	316	10	326	9	335	10	
440	345	10	355	10	365	10	375	10	385	10	395	9	404	10	414	10	424	10	434	10	
441	444	10	454	10	464	9	473	10	483	10	493	10	503	10	513	10	523	9	532	10	
442	542	10	552	10	562	10	572	10	582	9	591	10	601	10	611	10	621	10	631	9	
443	640	10	650	10	660	10	670	10	680	9	689	10	699	10	709	10	719	10	729	9	
444	738	10	748	10	758	10	768	9	777	10	787	10	797	10	807	9	816	10	826	10	1
445	836	10	846	10	856	9	865	10	875	10	885	10	895	9	904	10	914	10	924	9	2
446	64933	10	64943	10	64953	10	64963	9	64972	10	64982	10	64992	10	65002	9	65011	10	65021	10	3
447	65031	9	65040	10	65050	10	65060	10	65070	9	65079	10	65089	10	099	9	108	10	118	10	4
448	128	9	137	10	147	10	157	10	167	9	176	10	186	10	196	9	205	10	215	10	5
449	225	9	234	10	244	10	254	9	263	10	273	10	283	9	292	10	302	10	312	9	6
450	65321	10	65331	10	65341	9	65350	10	65360	9	65369	10	65379	10	65389	9	65398	10	65408	10	7
No.	0		1		2		3		4		5		6		7		8		9		8

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

450

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
450	65321	10	65331	10	65341	9	65350	10	65360	9	65369	10	65379	10	65389	9	65398	10	65408	10	10
451	418	9	427	10	437	10	447	9	456	10	466	9	475	10	485	10	495	9	504	10	1
452	514	9	523	10	533	10	543	9	552	10	562	9	571	10	581	10	591	9	600	10	2
453	610	9	619	10	629	10	639	9	648	10	658	9	667	10	677	9	686	10	696	10	3
454	706	9	715	10	725	9	734	10	744	9	753	10	763	9	772	10	782	10	792	9	4
455	801	10	811	9	820	10	830	9	839	10	849	9	858	10	868	9	877	10	887	9	5
456	896	10	65906	10	65916	9	65925	10	65935	9	65944	10	65954	9	65963	10	65973	9	65982	10	6
457	65992	9	66001	10	66011	9	66020	10	66030	9	66039	10	66049	9	66058	10	66068	9	66077	10	7
458	66087	9	096	10	106	9	115	9	124	10	134	9	143	10	153	9	162	10	172	9	8
459	181	10	191	9	200	10	210	9	219	10	229	9	238	9	247	10	257	9	266	10	9
460	276	9	285	10	295	9	304	10	314	9	323	9	332	10	342	9	351	10	361	9	
461	370	10	380	9	389	9	398	10	408	9	417	10	427	9	436	9	445	10	455	9	
462	464	10	474	9	483	9	492	10	502	9	511	10	521	9	530	9	539	10	549	9	
463	558	9	567	10	577	9	586	10	596	9	605	9	614	10	624	9	633	9	642	10	
464	652	9	661	10	671	9	680	9	689	10	699	9	708	9	717	10	727	9	736	9	
465	745	10	755	9	764	9	773	10	783	9	792	9	801	10	811	9	820	9	829	10	
466	839	9	848	9	857	10	867	9	876	9	885	9	894	10	904	9	66913	9	66922	10	
467	66932	9	66941	10	66950	10	66960	9	66969	9	66978	9	66987	10	66997	9	67006	9	67015	10	
468	67025	9	67034	10	67043	9	67052	10	67062	9	67071	9	67080	9	67089	10	099	9	108	9	
469	117	10	127	9	136	9	145	9	154	10	164	9	173	9	182	9	191	10	201	9	
470	210	9	219	9	228	9	237	10	247	9	256	9	265	9	274	10	284	9	293	9	9
471	302	9	311	10	321	9	330	9	339	9	348	9	357	10	367	9	376	9	385	9	
472	394	9	403	10	413	9	422	9	431	9	440	9	449	10	67459	9	67468	9	67477	9	
473	67486	9	67495	9	67504	10	67514	9	67523	9	67532	9	67541	9	550	10	560	9	569	9	1
474	578	9	587	9	596	9	605	9	614	10	624	9	633	9	642	9	651	9	660	9	2
475	669	10	679	9	688	9	697	9	706	9	715	9	724	9	733	9	742	10	752	9	3
476	761	9	770	9	779	9	788	9	797	9	806	9	815	10	825	9	834	9	843	9	4
477	852	9	861	9	870	9	879	9	888	9	897	9	906	10	67916	9	67925	9	67934	9	5
478	67943	9	67952	9	67961	9	67970	9	67979	9	67988	9	67997	9	68006	9	68015	9	68024	10	6
479	68034	9	68043	9	68052	9	68061	9	68070	9	68079	9	68088	9	097	9	106	9	115	9	7
480	124	9	133	9	142	9	151	9	160	9	169	9	178	9	187	9	196	9	205	10	
481	215	9	224	9	233	9	242	9	251	9	260	9	269	9	278	9	287	9	296	9	
482	305	9	314	9	323	9	332	9	341	9	350	9	359	9	368	9	377	9	386	9	
483	395	9	404	9	413	9	422	9	431	9	440	9	449	9	458	9	68467	9	68476	9	
484	68485	9	68494	9	68502	9	68511	9	68520	9	68529	9	68538	9	68547	9	556	9	565	9	
485	574	9	583	9	592	9	601	9	610	9	619	9	628	9	637	9	646	9	655	9	
486	664	9	673	9	681	9	690	9	699	9	708	9	717	9	726	9	735	9	744	9	
487	753	9	762	9	771	9	780	9	789	9	797	9	806	9	815	9	824	9	833	9	
488	842	9	851	9	860	9	869	9	878	9	886	9	895	9	904	9	68913	9	68922	9	
489	68931	9	68940	9	68949	9	68958	9	68966	9	68975	9	68984	9	68993	9	69002	9	69011	9	
490	69020	9	69028	9	69037	9	69046	9	69055	9	69064	9	69073	9	69082	9	090	9	099	9	
491	108	9	117	9	126	9	135	9	144	9	152	9	161	9	170	9	179	9	188	9	8
492	197	9	205	9	214	9	223	9	232	9	241	9	249	9	258	9	267	9	276	9	
493	285	9	294	9	302	9	311	9	320	9	329	9	338	9	346	9	355	9	364	9	
494	373	9	381	9	390	9	399	9	408	9	417	9	425	9	434	9	443	9	452	9	1
495	461	9	469	9	478	9	487	9	496	9	504	9	513	9	522	9	531	9	539	9	2
496	548	9	557	9	566	9	574	9	583	9	592	9	601	9	609	9	618	9	627	9	3
497	636	9	644	9	653	9	662	9	671	9	679	9	688	9	697	9	705	9	714	9	4
498	723	9	732	9	740	9	749	9	758	9	767	9	775	9	784	9	793	9	801	9	5
499	810	9	819	9	827	9	836	9	845	9	854	9	862	9	871	9	880	9	888	9	6
500	69897	9	69906	9	69914	9	69923	9	69932	9	69940	9	69949	9	69958	9	69966	9	69975	9	7
No.	0		1		2		3		4		5		6		7		8		9		

AIR NAVIGATION TABLES

Table II Logarithms of Numbers—Continued

500

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
500	69897		69906		69914		69923		69932		69940		69949		69958		69966		69975		
501	69984		69992		70001		70010		70018		70027		70036		70044		70053		70062		9
502	70070		70079		088		096		105		114		122		131		140		148		
503	157		165		174		183		191		200		209		217		226		234		
504	243		252		260		269		278		286		295		303		312		321		1
505	329		338		346		355		364		372		381		389		398		406		2
506	415		424		70432		70441		70449		70458		70467		70475		70484		70492		3
507	70501		70509		518		526		535		544		552		561		569		578		4
508	586		595		603		612		621		629		638		646		655		663		5
509	672		680		689		697		706		714		723		731		740		749		6
510	757		766		774		783		791		800		808		817		825		834		7
511	842		851		859		868		876		885		893		902		910		70919		8
512	70927		70935		70944		70952		70961		70969		70978		70986		70995		71003		
513	71012		71020		71029		71037		71046		71054		71063		71071		71079		088		
514	096		105		113		122		130		139		147		155		164		172		
515	181		189		198		206		214		223		231		240		248		257		
516	265		273		282		290		299		307		315		324		332		341		
517	349		357		366		374		383		391		399		408		416		425		
518	433		441		450		458		466		475		483		492		500		508		
519	517		525		533		542		550		559		567		575		584		592		
520	600		609		617		625		634		642		650		659		667		675		8
521	684		692		700		709		717		725		734		742		750		759		
522	767		775		784		792		800		809		817		825		834		842		
523	850		858		867		875		883		892		900		908		917		71925		
524	71933		71941		71950		71958		71966		71975		71983		71991		71999		72008		1
525	72016		72024		72032		72041		72049		72057		72066		72074		72082		090		2
526	099		107		115		123		132		140		148		156		165		173		3
527	181		189		198		206		214		222		230		239		247		255		4
528	263		272		280		288		296		304		313		321		329		337		5
529	346		354		362		370		378		387		395		403		411		419		6
530	428		72436		72444		72452		72460		72469		72477		72485		72493		72501		7
531	72509		518		526		534		542		550		558		567		575		583		
532	591		599		607		616		624		632		640		648		656		665		
533	673		681		689		697		705		713		722		730		738		746		
534	754		762		770		779		787		795		803		811		819		827		
535	835		843		852		860		868		876		884		892		900		908		
536	916		72925		72933		72941		72949		72957		72965		72973		72981		72989		
537	72997		73006		73014		73022		73030		73038		73046		73054		73062		73070		
538	73078		086		094		102		111		119		127		135		143		151		
539	159		167		175		183		191		199		207		215		223		231		
540	239		247		255		263		272		280		288		296		304		312		7
541	320		328		336		344		352		360		368		376		384		392		
542	400		408		416		424		432		440		448		456		464		472		
543	73480		73488		73496		73504		73512		73520		73528		73536		73544		73552		1
544	560		568		576		584		592		600		608		616		624		632		2
545	640		648		656		664		672		679		687		695		703		711		3
546	719		727		735		743		751		759		767		775		783		791		4
547	799		807		815		823		830		838		846		854		862		870		5
548	878		886		894		902		910		918		73926		73933		73941		73949		6
549	73957		73965		73973		73981		73989		73997		74005		74013		74020		74028		7
550	74036		74044		74052		74060		74068		74076		74084		74092		74099		74107		8
No.	0		1		2		3		4		5		6		7		8		9		

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

550

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
550	74036	8	74044	8	74052	8	74060	8	74068	8	74076	8	74084	8	74092	7	74099	8	74107	8	8
551	115	8	123	8	131	8	139	8	147	8	155	7	162	8	170	8	178	8	186	8	
552	194	8	202	8	210	8	218	7	225	8	233	8	241	8	249	8	257	8	265	8	
553	273	7	280	8	288	8	296	8	304	8	312	8	320	7	327	8	335	8	343	8	1
554	351	8	359	8	367	7	374	8	382	8	390	8	398	8	406	8	414	7	421	8	2
555	429	8	437	8	445	8	453	8	74461	7	74468	8	74476	8	74484	8	74492	8	74500	7	3
556	74507	8	74515	8	74523	8	74531	8	539	8	547	7	554	8	562	8	570	8	578	8	4
557	586	7	593	8	601	8	609	8	617	7	624	8	632	8	640	8	648	8	656	7	5
558	663	8	671	8	679	8	687	8	695	7	702	8	710	8	718	8	726	7	733	8	6
559	741	8	749	8	757	7	764	8	772	8	780	8	788	8	796	7	803	8	811	8	7
560	819	8	827	7	834	8	842	8	850	8	858	7	865	8	873	8	881	8	889	7	
561	896	8	904	8	912	8	920	7	74927	8	74935	8	74943	7	74950	8	74958	8	74966	8	
562	74974	7	74981	8	74989	8	74997	8	75005	8	75012	8	75020	8	75028	7	75035	8	75043	8	
563	75051	8	75059	8	75066	8	75074	8	082	7	089	8	097	8	105	8	113	7	120	8	
564	128	8	136	7	143	8	151	8	159	7	166	8	174	8	182	7	189	8	197	8	
565	205	8	213	7	220	8	228	8	236	7	243	8	251	8	259	7	266	8	274	8	
566	282	7	289	8	297	8	305	7	312	8	320	8	328	7	335	8	343	8	351	7	
567	358	8	366	8	374	7	381	8	389	8	397	7	404	8	412	8	420	7	427	8	
568	435	7	442	8	450	8	458	7	465	8	75473	8	75481	7	75488	8	75496	8	75504	7	
569	75511	8	75519	7	75526	8	75534	8	75542	7	549	8	557	8	565	7	572	8	580	7	
570	587	8	595	8	603	7	610	8	618	8	626	7	633	8	641	7	648	8	656	8	
571	664	7	671	8	679	7	686	8	694	8	702	7	709	8	717	7	724	8	732	8	
572	740	7	747	8	755	7	762	8	770	8	778	7	785	8	793	7	800	8	808	7	
573	815	8	823	8	831	7	838	8	846	7	853	8	861	7	868	8	876	8	884	7	
574	891	8	899	7	906	8	914	7	921	8	75929	8	75937	7	75944	8	75952	7	75959	8	
575	75967	7	75974	8	75982	7	75989	8	75997	8	76005	7	76012	8	76020	7	76027	8	76035	7	
576	76042	8	76050	7	76057	8	76065	7	76072	8	080	7	087	8	095	8	103	7	110	8	
577	118	7	125	8	133	7	140	8	148	7	155	8	163	7	170	8	178	7	185	8	
578	193	7	200	8	208	7	215	8	223	7	230	8	238	7	245	8	253	7	260	8	
579	268	7	275	8	283	7	290	8	298	7	305	8	313	7	320	8	328	7	335	8	
580	343	7	350	8	358	7	365	8	373	7	380	8	388	7	395	8	403	7	410	8	
581	418	7	425	8	433	7	440	8	448	7	76455	8	76462	8	76470	7	76477	8	76485	7	
582	76492	8	76500	7	76507	8	76515	7	76522	8	530	7	537	8	545	7	552	7	559	8	
583	567	7	574	8	582	7	589	8	597	7	604	8	612	7	619	8	626	8	634	7	
584	641	8	649	7	656	8	664	7	671	8	678	8	686	7	693	8	701	7	708	8	
585	716	7	723	7	730	8	738	7	745	8	753	7	760	8	768	7	775	7	782	8	
586	790	7	797	8	805	7	812	8	819	8	827	7	834	8	842	7	849	7	856	8	
587	864	7	871	8	879	7	886	7	893	8	901	7	908	8	916	7	923	7	76930	8	
588	76938	7	76945	8	76953	7	76960	7	76967	8	76975	7	76982	7	76989	8	76997	7	77004	8	
589	77012	7	77019	7	77026	8	77034	7	77041	8	77048	8	77056	7	77063	7	77070	8	078	7	
590	085	8	093	7	100	7	107	8	115	7	122	7	129	8	137	7	144	7	151	8	
591	159	7	166	7	173	8	181	7	188	7	195	8	203	7	210	7	217	8	225	7	
592	232	8	240	7	247	7	254	8	262	7	269	8	276	7	283	8	291	7	298	7	
593	305	8	313	7	320	7	327	8	335	7	342	7	349	8	357	7	364	7	371	8	
594	379	7	386	7	393	8	401	7	408	7	415	7	422	8	430	7	437	7	77444	8	
595	77452	7	77459	7	77466	8	77474	7	77481	7	77488	8	77495	8	77503	7	77510	7	517	8	
596	525	7	532	7	539	7	546	8	554	7	561	7	568	8	576	7	583	7	590	7	
597	597	8	605	7	612	7	619	8	627	7	634	7	641	7	648	8	656	7	663	7	
598	670	7	677	8	685	7	692	7	699	7	706	8	714	7	721	7	728	7	735	8	
599	743	7	750	7	757	7	764	8	772	7	779	7	786	7	793	8	801	7	808	7	
600	77815	7	77822	8	77830	7	77837	7	77844	7	77851	8	77859	7	77866	7	77873	7	77880	7	
No.	0		1		2		3		4		5		6		7		8		9		

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

600

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
600	77815	7	77822	8	77830	7	77837	7	77844	7	77851	8	77859	7	77866	7	77873	7	77880	7	8
601	887	8	895	7	902	7	909	7	916	8	924	7	77931	7	77938	7	77945	7	77952	8	1
602	77960	7	77967	7	77974	7	77981	7	77988	8	77996	7	78003	7	78010	7	78017	8	78025	7	2
603	78032	7	78039	7	78046	7	78053	8	78061	7	78068	7	075	7	082	7	089	8	097	7	3
604	104	7	111	7	118	7	125	7	132	8	140	7	147	7	154	7	161	7	168	8	4
605	176	7	183	7	190	7	197	7	204	7	211	8	219	7	226	7	233	7	240	7	5
606	247	7	254	8	262	7	269	7	276	7	283	7	290	7	297	8	305	7	312	7	6
607	319	7	326	7	333	7	340	7	347	8	355	7	362	7	369	7	376	7	383	7	7
608	390	8	398	7	405	7	412	7	419	7	426	7	78433	7	78440	7	78447	8	78455	7	8
609	78462	7	78469	7	78476	7	78483	7	78490	7	78497	7	504	8	512	7	519	7	526	7	9
610	533	7	540	7	547	7	554	7	561	8	569	7	576	7	583	7	590	7	597	7	
611	604	7	611	7	618	7	625	8	633	7	640	7	647	7	654	7	661	7	668	7	
612	675	7	682	7	689	7	696	8	704	7	711	7	718	7	725	7	732	7	739	7	
613	746	7	753	7	760	7	767	7	774	7	781	8	789	7	796	7	803	7	810	7	
614	817	7	824	7	831	7	838	7	845	7	852	7	859	7	866	7	873	7	880	8	
615	888	7	895	7	902	7	909	7	916	7	923	7	78930	7	78937	7	78944	7	78951	7	
616	78958	7	78965	7	78972	7	78979	7	78986	7	78993	7	79000	7	79007	7	79014	7	79021	8	
617	79029	7	79036	7	79043	7	79050	7	79057	7	79064	7	071	7	078	7	085	7	092	7	
618	099	7	106	7	113	7	120	7	127	7	134	7	141	7	148	7	155	7	162	7	
619	169	7	176	7	183	7	190	7	197	7	204	7	211	7	218	7	225	7	232	7	
620	239	7	246	7	253	7	260	7	267	7	274	7	281	7	288	7	295	7	302	7	7
621	309	7	316	7	323	7	330	7	337	7	344	7	351	7	358	7	365	7	372	7	
622	379	7	386	7	393	7	400	7	407	7	414	7	421	7	428	7	435	7	442	7	
623	449	7	456	7	463	7	470	7	477	7	484	7	79491	7	79498	7	79505	6	79511	7	1
624	79518	7	79525	7	79532	7	79539	7	79546	7	79553	7	560	7	567	7	574	7	581	7	2
625	588	7	595	7	602	7	609	7	616	7	623	7	630	7	637	7	644	6	650	7	3
626	657	7	664	7	671	7	678	7	685	7	692	7	699	7	706	7	713	7	720	7	4
627	727	7	734	7	741	7	748	6	754	7	761	7	768	7	775	7	782	7	789	7	5
628	796	7	803	7	810	7	817	7	824	7	831	6	837	7	844	7	851	7	858	7	6
629	865	7	872	7	879	7	886	7	893	7	900	6	906	7	913	7	920	7	927	7	7
630	79934	7	79941	7	79948	7	79955	7	79962	7	79969	6	79975	7	79982	7	79989	7	79996	7	
631	80003	7	80010	7	80017	7	80024	6	80030	7	80037	7	80044	7	80051	7	80058	7	80065	7	
632	072	7	079	6	085	7	092	7	099	7	106	7	113	7	120	7	127	7	134	6	
633	140	7	147	7	154	7	161	7	168	7	175	7	182	6	188	7	195	7	202	7	
634	209	7	216	7	223	6	229	7	236	7	243	7	250	7	257	7	264	7	271	6	
635	277	7	284	7	291	7	298	7	305	7	312	6	318	7	325	7	332	7	339	7	
636	346	7	353	6	359	7	366	7	373	7	380	7	387	6	393	7	400	7	407	7	
637	414	7	421	7	428	6	434	7	441	7	448	7	455	7	462	6	468	7	475	7	
638	80482	7	80489	7	80496	6	80502	7	80509	7	80516	7	80523	7	80530	6	80536	7	80543	7	
639	550	7	557	7	564	6	570	7	577	7	584	7	591	7	598	6	604	7	611	7	
640	618	7	625	7	632	6	638	7	645	7	652	7	659	6	665	7	672	7	679	7	
641	686	7	693	6	699	7	706	7	713	7	720	6	726	7	733	7	740	7	747	7	
642	754	6	760	7	767	7	774	7	781	6	787	7	794	7	801	7	808	6	814	7	6
643	821	7	828	7	835	6	841	7	848	7	855	7	862	6	868	7	875	7	882	7	
644	889	6	895	7	902	7	909	7	916	6	922	7	929	7	80936	7	80943	6	80949	7	1
645	80956	7	80963	6	80969	7	80976	7	80983	7	80990	6	80996	7	81003	7	81010	7	81017	6	2
646	81023	7	81030	7	81037	6	81043	7	81050	7	81057	7	81064	6	070	7	077	7	084	6	3
647	090	7	097	7	104	7	111	6	117	7	124	7	131	6	137	7	144	7	151	7	4
648	158	6	164	7	171	7	178	6	184	7	191	7	198	6	204	7	211	7	218	6	5
649	224	7	231	7	238	7	245	6	251	7	258	7	265	6	271	7	278	7	285	6	
650	81291	7	81298	7	81305	6	81311	7	81318	7	81325	6	81331	7	81338	7	81345	6	81351	7	
No.	0		1		2		3		4		5		6		7		8		9		

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

650

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
650	81291	7	81298	7	81305	6	81311	7	81318	7	81325	6	81331	7	81338	7	81345	6	81351	7	
651	358	7	365	6	371	7	378	7	385	6	391	7	398	7	405	6	411	7	418	7	
652	425	6	431	7	438	7	445	6	451	7	458	7	465	6	471	7	478	7	485	6	
653	491	7	498	7	505	6	511	7	513	7	525	6	531	7	538	6	544	7	551	7	
654	558	6	564	7	571	7	578	6	584	7	591	7	598	6	604	7	611	6	617	7	
655	624	7	631	6	637	7	644	7	651	6	657	7	664	7	671	6	677	7	684	6	
656	690	7	697	7	704	6	710	7	717	6	723	7	730	7	737	6	743	7	750	7	
657	757	6	763	7	770	6	776	7	783	7	790	6	796	7	803	6	809	7	816	7	
658	823	6	829	7	836	6	842	7	849	7	856	6	862	7	869	6	875	7	882	7	
659	889	6	895	7	902	6	908	7	915	6	921	7	928	7	81935	6	81941	7	81948	6	
660	81954	7	81961	7	81968	6	81974	7	81981	6	81987	7	81994	6	82000	7	82007	7	82014	6	
661	82020	7	82027	6	82033	7	82040	6	82046	7	82053	7	82060	6	066	7	073	6	079	7	
662	086	6	092	7	099	6	105	7	112	7	119	6	125	7	132	6	138	7	145	6	
663	151	7	158	6	164	7	171	7	178	6	184	7	191	6	197	7	204	6	210	7	
664	217	6	223	7	230	6	236	7	243	6	249	7	256	7	263	6	269	7	276	6	
665	282	7	289	6	295	7	302	6	308	7	315	6	321	7	328	6	334	7	341	6	
666	347	7	354	6	360	7	367	6	373	7	380	7	387	6	393	7	400	6	406	7	
667	413	6	419	7	426	6	432	7	439	6	445	7	452	6	458	7	465	6	471	7	
668	82478	6	82484	7	82491	6	82497	7	82504	6	82510	7	82517	6	82523	7	82530	6	82536	7	
669	543	6	549	7	556	6	562	7	569	6	575	7	582	6	588	7	595	6	601	7	
670	607	7	614	6	620	7	627	6	633	7	640	6	646	7	653	6	659	7	666	6	
671	672	7	679	6	685	7	692	6	698	7	705	6	711	7	718	6	724	7	730	7	
672	737	6	743	7	750	6	756	7	763	6	769	7	776	6	782	7	789	6	795	7	
673	802	6	808	7	814	7	821	6	827	7	834	6	840	7	847	6	853	7	860	6	
674	866	6	872	7	879	6	885	7	892	6	898	7	905	6	911	7	918	6	924	7	
675	930	7	82937	6	82943	7	82950	6	82956	7	82963	6	82969	7	82975	6	82982	7	82988	7	
676	82995	6	83001	7	83008	6	83014	7	83020	6	83027	7	83033	6	83040	7	83046	6	83052	7	
677	83059	6	065	7	072	6	078	7	085	6	091	7	097	6	104	7	110	6	117	7	
678	123	6	129	7	136	6	142	7	149	6	155	7	161	6	168	7	174	6	181	7	
679	187	6	193	7	200	6	206	7	213	6	219	7	225	6	232	7	238	6	245	7	
680	251	6	257	7	264	6	270	7	276	6	283	7	289	6	296	7	302	6	308	7	
681	315	6	321	7	327	6	334	7	340	6	347	7	353	6	359	7	366	6	372	7	
682	378	7	385	6	391	7	398	6	404	7	410	6	417	7	423	6	429	7	436	6	
683	442	6	448	7	455	6	461	7	467	6	474	7	480	6	487	7	493	6	83499	7	
684	83506	6	83512	7	83518	6	83525	7	83531	6	83537	7	83544	6	83550	7	83556	6	563	7	
685	569	6	575	7	582	6	588	7	594	6	601	7	607	6	613	7	620	6	626	7	
686	632	7	639	6	645	7	651	6	658	7	664	6	670	7	677	6	683	7	689	7	
687	696	6	702	7	708	7	715	6	721	7	727	6	734	7	740	6	746	7	753	6	
688	759	6	765	7	771	7	778	6	784	7	790	7	797	6	803	7	809	6	816	7	
689	822	6	828	7	835	6	841	7	847	6	853	7	860	6	866	7	872	6	879	7	
690	885	6	891	7	897	6	904	7	910	6	916	7	923	6	929	7	935	6	83942	7	
691	83948	6	83954	7	83960	6	83967	7	83973	6	83979	7	83985	6	83992	7	83998	6	84004	7	
692	84011	6	84017	7	84023	6	84029	7	84036	6	84042	7	84048	6	84055	7	84061	6	067	6	
693	073	7	080	6	086	7	092	6	098	7	105	6	111	6	117	7	123	6	130	6	
694	136	6	142	7	148	7	155	6	161	7	167	6	173	7	180	6	186	7	192	6	
695	198	7	205	6	211	7	217	6	223	7	230	6	236	7	242	6	248	7	255	6	
696	261	6	267	7	273	6	280	7	286	6	292	7	298	6	305	7	311	6	317	7	
697	323	7	330	6	336	7	342	6	348	7	354	6	361	7	367	6	373	7	379	6	
698	386	6	392	7	398	6	404	7	410	6	417	7	423	6	429	7	435	6	442	7	
699	448	6	454	7	460	6	466	7	473	6	479	7	485	6	491	7	497	6	504	7	
700	84510	6	84516	7	84522	6	84528	7	84535	6	84541	7	84547	6	84553	7	84559	6	84566	7	
No.	0		1		2		3		4		5		6		7		8		9		

Prop. Parts	7
1	1
2	1
3	2
4	3
5	4
6	5
7	6
8	6
9	6

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

700

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
700	84510	6	84516	6	84522	6	84528	7	84535	6	84541	6	84547	6	84553	6	84559	7	84566	6	7
701	572	6	578	6	584	6	590	7	597	6	603	6	609	6	615	6	621	7	628	6	
702	634	6	640	6	646	6	652	6	658	7	665	6	671	6	677	6	683	6	689	7	
703	696	6	702	6	708	6	714	6	720	6	726	7	733	6	739	6	745	6	751	6	1
704	757	6	763	7	770	6	776	6	782	6	788	6	794	6	800	7	807	6	813	6	2
705	819	6	825	6	831	6	837	7	844	6	850	6	856	6	862	6	868	6	874	6	3
706	880	7	887	6	893	6	899	6	905	6	911	6	917	7	924	6	930	6	936	6	4
707	84942	6	84948	6	84954	6	84960	7	84967	6	84973	6	84979	6	84985	6	84991	6	84997	6	5
708	85003	6	85009	7	85016	6	85022	6	85028	6	85034	6	85040	6	85046	6	85052	6	85058	7	6
709	065	6	071	6	077	6	083	6	089	6	095	6	101	6	107	7	114	6	120	6	7
710	126	6	132	6	138	6	144	6	150	6	156	7	163	6	169	6	175	6	181	6	
711	187	6	193	6	199	6	205	6	211	6	217	7	224	6	230	6	236	6	242	6	
712	248	6	254	6	260	6	266	6	272	6	278	7	285	6	291	6	297	6	303	6	
713	309	6	315	6	321	6	327	6	333	6	339	6	345	7	352	6	358	6	364	6	
714	370	6	376	6	382	6	388	6	394	6	400	6	406	6	412	6	418	7	425	6	
715	431	6	437	6	443	6	449	6	455	6	461	6	467	6	473	6	479	6	485	6	
716	85491	6	85497	6	85503	6	85509	7	85516	6	85522	6	85528	6	85534	6	85540	6	85546	6	
717	552	6	558	6	564	6	570	6	576	6	582	6	588	6	594	6	600	6	606	6	
718	612	6	618	7	625	6	631	6	637	6	643	6	649	6	655	6	661	6	667	6	
719	673	6	679	6	685	6	691	6	697	6	703	6	709	6	715	6	721	6	727	6	
720	733	6	739	6	745	6	751	6	757	6	763	6	769	6	775	6	781	7	788	6	6
721	794	6	800	6	806	6	812	6	818	6	824	6	830	6	836	6	842	6	848	6	
722	854	6	860	6	866	6	872	6	878	6	884	6	890	6	896	6	902	6	908	6	
723	914	6	920	6	926	6	932	6	938	6	85944	6	85950	6	85956	6	85962	6	85968	6	1
724	85974	6	85980	6	85986	6	85992	6	85998	6	86004	6	86010	6	86016	6	86022	6	86028	6	2
725	86034	6	86040	6	86046	6	86052	6	86058	6	064	6	070	6	076	6	082	6	088	6	3
726	094	6	100	6	106	6	112	6	118	6	124	6	130	6	136	5	141	6	147	6	4
727	153	6	159	6	165	6	171	6	177	6	183	6	189	6	195	6	201	6	207	6	5
728	213	6	219	6	225	6	231	6	237	6	243	6	249	6	255	6	261	6	267	6	6
729	273	6	279	6	285	6	291	6	297	6	303	5	308	6	314	6	320	6	326	6	7
730	332	6	338	6	344	6	350	6	356	6	362	6	368	6	374	6	380	6	386	6	8
731	392	6	398	6	404	6	410	5	415	6	421	6	427	6	433	6	439	6	445	6	9
732	86451	6	86457	6	86463	6	86469	6	86475	6	86481	6	86487	6	86493	6	86499	5	86504	6	
733	510	6	516	6	522	6	528	6	534	6	540	6	546	6	552	6	558	6	564	6	
734	570	6	576	5	581	6	587	6	593	6	599	6	605	6	611	6	617	6	623	6	
735	629	6	635	6	641	5	646	6	652	6	658	6	664	6	670	6	676	6	682	6	
736	688	6	694	6	700	5	705	6	711	6	717	6	723	6	729	6	735	6	741	6	
737	747	6	753	6	759	5	764	6	770	6	776	6	782	6	788	6	794	6	800	6	
738	806	6	812	5	817	6	823	6	829	6	835	6	841	6	847	6	853	6	859	5	
739	864	6	870	6	876	6	882	6	888	6	894	6	900	6	906	5	911	6	917	6	
740	923	6	929	6	935	6	941	6	86947	6	86953	5	86958	6	86964	6	86970	6	86976	6	5
741	86982	6	86988	6	86994	6	86999	6	87005	6	87011	6	87017	6	87023	6	87029	6	87035	5	
742	87040	6	87046	6	87052	6	87058	6	064	6	070	5	075	6	081	6	087	6	093	6	1
743	099	6	105	6	111	5	116	6	122	6	128	6	134	6	140	6	146	5	151	6	2
744	157	6	163	6	169	6	175	6	181	5	186	6	192	6	198	6	204	6	210	6	3
745	216	5	221	6	227	6	233	6	239	6	245	6	251	5	256	6	262	6	268	6	4
746	274	6	280	6	286	5	291	6	297	6	303	6	309	6	315	5	320	6	326	6	5
747	332	6	338	6	344	6	349	6	355	6	361	6	367	6	373	6	379	5	384	6	6
748	390	6	396	6	402	6	408	5	413	6	419	6	425	6	431	6	437	5	442	6	7
749	448	6	454	6	460	6	466	5	471	6	477	6	483	6	489	6	495	5	500	6	8
750	87506	6	87512	6	87518	6	87523	6	87529	6	87535	6	87541	6	87547	5	87552	6	87558	6	9
No.	0		1		2		3		4		5		6		7		8		9		

ARMY AIR FORCES

Table II. Logarithms of Numbers--Continued

750

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
750	87506	6	87512	6	87518	5	87523	6	87529	6	87535	6	87541	6	87547	5	87552	6	87558	6	6
751	564	6	570	6	576	5	581	6	587	6	593	6	599	5	604	6	610	6	616	6	1
752	622	6	628	5	633	6	639	6	645	6	651	5	656	6	662	6	668	6	674	5	2
753	679	6	685	6	691	6	697	6	703	5	708	6	714	6	720	6	726	5	731	6	3
754	737	6	743	6	749	5	754	6	760	6	766	6	772	5	777	6	783	6	789	6	4
755	795	5	800	6	806	6	812	6	818	5	823	6	829	6	835	6	841	5	846	6	5
756	852	6	858	6	864	5	869	6	875	6	881	6	887	5	892	6	898	6	904	6	6
757	910	6	915	6	921	6	927	6	933	5	938	6	87944	6	87950	5	87955	6	87961	6	7
758	87967	6	87973	5	87978	6	87984	6	87990	6	87996	6	88001	6	88007	6	88013	6	88018	6	8
759	88024	6	88030	6	88036	5	88041	6	88047	6	88053	5	058	6	064	6	070	6	076	5	9
760	081	6	087	6	093	5	098	6	104	6	110	6	116	5	121	6	127	6	133	5	
761	138	6	144	6	150	6	156	5	161	6	167	6	173	5	178	6	184	6	190	5	
762	195	6	201	6	207	6	213	6	218	6	224	6	230	5	235	6	241	6	247	5	
763	252	6	258	6	264	6	270	5	275	6	281	6	287	5	292	6	298	6	304	5	
764	309	6	315	6	321	5	326	6	332	6	338	5	343	6	349	6	355	5	360	6	
765	366	6	372	5	377	6	383	6	389	6	395	5	400	6	406	6	412	5	417	6	
766	423	6	429	5	434	6	440	6	446	5	451	6	457	6	463	5	468	6	474	6	
767	480	5	485	6	491	6	88497	6	88502	6	88508	5	88513	6	88519	6	88525	6	88530	6	
768	88536	6	88542	5	88547	6	553	6	559	6	564	6	570	6	576	5	581	6	587	6	
769	593	5	598	6	604	6	610	5	615	6	621	6	627	5	632	6	638	5	643	6	
770	649	6	655	5	660	6	666	6	672	5	677	6	683	6	689	5	694	6	700	5	
771	705	6	711	6	717	5	722	6	728	6	734	5	739	6	745	5	750	6	756	6	
772	762	5	767	6	773	6	779	5	784	6	790	5	795	6	801	6	807	5	812	6	
773	818	6	824	5	829	6	835	5	840	6	846	6	852	5	857	6	863	5	868	6	
774	874	6	880	5	885	6	891	6	897	5	902	6	908	5	913	6	919	6	925	5	
775	930	6	936	5	941	6	88947	6	88953	5	88958	6	88964	6	88969	5	88975	6	88981	5	
776	88986	6	88992	5	88997	6	89003	6	89009	5	89014	6	89020	5	89025	6	89031	6	89037	5	
777	89042	6	89048	5	89053	6	059	5	064	6	070	6	076	5	081	6	087	5	092	6	
778	098	6	104	5	109	6	115	5	120	6	126	5	131	6	137	6	143	5	148	6	
779	154	5	159	6	165	6	170	6	176	5	182	6	187	6	193	5	198	6	204	5	
780	209	6	215	5	221	6	226	6	232	5	237	6	243	5	248	6	254	6	260	5	
781	265	6	271	5	276	6	282	5	287	6	293	5	298	6	304	6	310	5	315	6	
782	321	5	326	6	332	5	337	6	343	5	348	6	354	6	360	5	365	6	371	5	
783	376	6	382	5	387	6	393	5	398	6	404	5	409	6	415	6	421	5	426	6	
784	432	5	437	6	443	5	448	6	89454	5	89459	6	89465	5	89470	6	89476	5	89481	6	
785	89487	5	89492	6	89498	6	89504	5	509	6	515	5	520	6	526	5	531	6	537	5	
786	542	6	548	5	553	6	559	5	564	6	570	5	575	6	581	5	586	6	592	5	
787	597	6	603	5	609	5	614	6	620	5	625	6	631	5	636	6	642	5	647	6	
788	653	5	658	6	664	5	669	6	675	5	680	6	686	5	691	6	697	5	702	6	
789	708	5	713	6	719	5	724	6	730	5	735	6	741	5	746	6	752	5	757	6	
790	763	5	768	6	774	5	779	6	785	5	790	6	796	5	801	6	807	5	812	6	
791	818	5	823	6	829	5	834	6	840	5	845	6	851	5	856	6	862	5	867	6	
792	873	5	878	6	883	5	889	5	894	6	900	5	905	6	911	5	916	6	922	5	
793	927	6	933	5	938	6	944	5	89949	6	89955	5	89960	6	89966	5	89971	6	89977	5	
794	89982	6	89988	5	89993	6	89998	5	90004	5	90009	6	90015	5	90020	6	90026	5	90031	6	
795	90037	5	90042	6	90048	5	90053	6	059	5	064	6	069	5	075	6	080	5	086	6	
796	091	6	097	5	102	6	108	5	113	6	119	5	124	6	129	5	135	6	140	5	
797	146	5	151	6	157	5	162	6	168	5	173	6	179	5	184	6	189	5	195	6	
798	200	6	206	5	211	6	217	5	222	6	227	5	233	6	238	5	244	6	249	5	
799	255	5	260	6	266	5	271	6	276	5	282	6	287	5	293	6	298	5	304	6	
800	90309	5	90314	6	90320	5	90325	6	90331	5	90336	6	90342	5	90347	6	90352	5	90358	6	
No.	0		1		2		3		4		5		6		7		8		9		

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

800

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
800	90309		90314		90320		90325		90331		90336		90342		90347		90352		90358		6
801	363		369		374		380		385		390		396		401		407		412		1
802	417		423		428		434		439		445		450		455		461		466		2
803	472		477		482		488		493		90499		504		509		515		520		3
804	526		531		536		542		547		553		558		563		569		574		4
805	580		585		590		596		601		607		612		617		623		90628		5
806	90634		90639		90644		90650		90655		90660		90666		90671		90677		682		6
807	687		693		698		703		709		714		720		725		730		736		7
808	741		747		752		757		763		768		773		779		784		789		8
809	795		800		806		811		816		822		827		832		838		843		9
810	849		854		859		865		870		875		881		886		891		897		
811	902		907		913		918		924		929		934		940		945		90950		
812	90956		90961		90966		90972		90977		90982		90988		90993		90998		91004		
813	91009		91014		91020		91025		91030		91036		91041		91046		91052		057		
814	062		068		073		078		084		089		094		100		105		110		
815	116		121		126		132		137		142		148		153		158		164		
816	169		174		180		185		190		196		201		206		212		217		
817	222		228		233		238		243		249		254		259		265		270		
818	275		281		286		291		297		302		307		312		318		91323		
819	91328		91334		91339		91344		91350		91355		91360		91365		91371		376		
820	381		387		392		397		403		408		413		418		424		429		
821	434		440		445		450		455		461		466		471		477		482		
822	487		492		498		503		508		514		519		524		529		535		
823	540		545		551		556		561		566		572		577		582		587		
824	593		598		603		609		614		619		624		630		635		91640		
825	91645		91651		91656		91661		91666		91672		91677		91682		91687		693		
826	698		703		709		714		719		724		730		735		740		745		
827	751		756		761		766		772		777		782		787		793		798		
828	803		808		814		819		824		829		834		840		845		850		
829	855		861		866		871		876		882		887		892		897		903		
830	908		913		918		924		929		934		939		944		91950		91955		
831	91960		91965		91971		91976		91981		91986		91991		91997		92002		92007		
832	92012		92018		92023		92028		92033		92038		92044		92049		054		059		
833	065		070		075		080		085		091		096		101		106		111		
834	117		122		127		132		137		143		148		153		158		163		
835	169		174		179		184		189		195		200		205		210		215		
836	221		226		231		236		241		247		252		257		262		267		
837	273		278		283		288		293		298		304		309		314		319		
838	324		330		335		340		345		350		355		361		366		371		
839	376		381		387		392		397		402		407		412		418		423		
840	428		433		438		443		449		454		459		464		92469		92474		
841	92480		92485		92490		92495		92500		92505		92511		92516		521		526		5
842	531		536		542		547		552		557		562		567		572		578		
843	583		588		593		598		603		609		614		619		624		629		1
844	634		639		645		650		655		660		665		670		675		681		2
845	686		691		696		701		706		711		716		722		727		732		3
846	737		742		747		752		758		763		768		773		778		783		4
847	788		793		799		804		809		814		819		824		829		834		5
848	840		845		850		855		860		865		870		875		881		886		6
849	891		896		901		906		911		916		921		927		932		937		7
850	92942		92947		92952		92957		92962		92967		92973		92978		92983		92988		8
No.	0		1		2		3		4		5		6		7		8		9		10

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

850

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
850	92942	s	92947	s	92952	s	92957	s	92962	s	92967	s	92973	s	92978	s	92983	s	92988	s	6
851	92993	s	92998	s	93003	s	93008	s	93013	s	93018	s	93024	s	93029	s	93034	s	93039	s	1
852	93044	s	93049	s	054	s	059	s	064	s	069	s	075	s	080	s	085	s	090	s	2
853	095	s	100	s	105	s	110	s	115	s	120	s	125	s	131	s	136	s	141	s	3
854	146	s	151	s	156	s	161	s	166	s	171	s	176	s	181	s	186	s	192	s	4
855	197	s	202	s	207	s	212	s	217	s	222	s	227	s	232	s	237	s	242	s	5
856	247	s	252	s	258	s	263	s	268	s	273	s	278	s	283	s	288	s	293	s	6
857	298	s	303	s	93308	s	93313	s	93318	s	93323	s	93328	s	93334	s	93339	s	93344	s	7
858	93349	s	93354	s	359	s	364	s	369	s	374	s	379	s	384	s	389	s	394	s	8
859	399	s	404	s	409	s	414	s	420	s	425	s	430	s	435	s	440	s	445	s	9
860	450	s	455	s	460	s	465	s	470	s	475	s	480	s	485	s	490	s	495	s	
861	500	s	505	s	510	s	515	s	520	s	526	s	531	s	536	s	541	s	546	s	
862	551	s	556	s	561	s	566	s	571	s	576	s	581	s	586	s	591	s	596	s	
863	601	s	606	s	611	s	616	s	621	s	626	s	631	s	636	s	641	s	646	s	
864	93651	s	93656	s	93661	s	93666	s	93671	s	93676	s	93682	s	93687	s	93692	s	93697	s	
865	702	s	707	s	712	s	717	s	722	s	727	s	732	s	737	s	742	s	747	s	
866	752	s	757	s	762	s	767	s	772	s	777	s	782	s	787	s	792	s	797	s	
867	802	s	807	s	812	s	817	s	822	s	827	s	832	s	837	s	842	s	847	s	
868	852	s	857	s	862	s	867	s	872	s	877	s	882	s	887	s	892	s	897	s	
869	902	s	907	s	912	s	917	s	922	s	927	s	932	s	937	s	942	s	947	s	
870	93952	s	93957	s	93962	s	93967	s	93972	s	93977	s	93982	s	93987	s	93992	s	93997	s	5
871	94002	s	94007	s	94012	s	94017	s	94022	s	94027	s	94032	s	94037	s	94042	s	94047	s	1
872	052	s	057	s	062	s	067	s	072	s	077	s	082	s	086	s	091	s	096	s	2
873	101	s	106	s	111	s	116	s	121	s	126	s	131	s	136	s	141	s	146	s	3
874	151	s	156	s	161	s	166	s	171	s	176	s	181	s	186	s	191	s	196	s	4
875	201	s	206	s	211	s	216	s	221	s	226	s	231	s	236	s	240	s	245	s	5
876	250	s	255	s	260	s	265	s	270	s	275	s	280	s	285	s	290	s	295	s	6
877	300	s	305	s	310	s	315	s	320	s	325	s	330	s	335	s	340	s	345	s	7
878	349	s	354	s	359	s	364	s	369	s	374	s	379	s	384	s	389	s	394	s	8
879	399	s	404	s	409	s	414	s	419	s	424	s	429	s	433	s	438	s	443	s	9
880	94448	s	94453	s	94458	s	94463	s	94468	s	94473	s	94478	s	94483	s	94488	s	94493	s	10
881	498	s	503	s	507	s	512	s	517	s	522	s	527	s	532	s	537	s	542	s	
882	547	s	552	s	557	s	562	s	567	s	571	s	576	s	581	s	586	s	591	s	
883	596	s	601	s	606	s	611	s	616	s	621	s	626	s	630	s	635	s	640	s	
884	645	s	650	s	655	s	660	s	665	s	670	s	675	s	680	s	685	s	689	s	
885	694	s	699	s	704	s	709	s	714	s	719	s	724	s	729	s	734	s	738	s	
886	743	s	748	s	753	s	758	s	763	s	768	s	773	s	778	s	783	s	787	s	
887	792	s	797	s	802	s	807	s	812	s	817	s	822	s	827	s	832	s	836	s	
888	841	s	846	s	851	s	856	s	861	s	866	s	871	s	876	s	880	s	885	s	
889	890	s	895	s	900	s	905	s	910	s	915	s	919	s	924	s	929	s	934	s	
890	939	s	944	s	949	s	94954	s	94959	s	94963	s	94968	s	94973	s	94978	s	94983	s	
891	94988	s	94993	s	94998	s	95002	s	95007	s	95012	s	95017	s	95022	s	95027	s	95032	s	4
892	95036	s	95041	s	95046	s	051	s	056	s	061	s	066	s	071	s	075	s	080	s	1
893	085	s	090	s	095	s	100	s	105	s	109	s	114	s	119	s	124	s	129	s	2
894	134	s	139	s	143	s	148	s	153	s	158	s	163	s	168	s	173	s	177	s	3
895	182	s	187	s	192	s	197	s	202	s	207	s	211	s	216	s	221	s	226	s	4
896	231	s	236	s	240	s	245	s	250	s	255	s	260	s	265	s	270	s	274	s	5
897	279	s	284	s	289	s	294	s	299	s	303	s	308	s	313	s	318	s	323	s	6
898	328	s	332	s	337	s	342	s	347	s	352	s	357	s	361	s	366	s	371	s	7
899	376	s	381	s	386	s	390	s	395	s	400	s	405	s	410	s	415	s	419	s	8
900	95424	s	95429	s	95434	s	95439	s	95444	s	95448	s	95453	s	95458	s	95463	s	95468	s	9
No.	0		1		2		3		4		5		6		7		8		9		10

AIR NAVIGATION TABLES

Table II. Logarithms of Numbers—Continued

900

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
900	95424	5	95429	5	95434	5	95439	5	95444	5	95448	5	95453	5	95458	5	95463	5	95468	5	5
901	472	5	477	5	482	5	487	5	492	5	497	5	501	5	506	5	511	5	516	5	1
902	521	4	525	5	530	5	535	5	540	5	545	5	550	4	554	5	559	5	564	5	2
903	569	5	574	4	578	5	583	5	588	5	593	5	598	4	602	5	607	5	612	5	3
904	617	5	622	4	626	5	631	5	636	5	641	5	646	4	650	5	655	5	660	5	4
905	665	5	95670	4	95674	5	95679	5	95684	5	95689	5	95694	4	95698	5	95703	5	95708	5	5
906	95713	5	718	4	722	5	727	5	732	5	737	5	742	4	746	5	751	5	756	5	6
907	761	5	766	4	770	5	775	5	780	5	785	4	789	5	794	5	799	5	804	5	7
908	809	4	813	5	818	5	823	5	828	4	832	5	837	5	842	5	847	5	852	4	8
909	856	5	861	5	866	5	871	4	875	5	880	5	885	5	890	5	895	4	899	5	9
910	904	5	909	5	914	4	918	5	923	5	928	5	933	5	938	4	942	5	947	5	10
911	952	5	95957	4	95961	5	95966	5	95971	5	95976	4	95980	5	95985	5	95990	5	95995	4	
912	95999	5	96004	5	96009	5	96014	5	96019	4	96023	5	96028	5	96033	4	96038	4	96042	5	
913	96047	5	052	5	057	4	061	5	066	5	071	5	076	4	080	5	085	5	090	5	
914	095	4	099	5	104	5	109	5	114	4	118	5	123	5	128	5	133	4	137	5	
915	142	5	147	5	152	4	156	5	161	5	166	5	171	4	175	5	180	5	185	5	
916	190	4	194	5	199	5	204	5	209	4	213	5	218	5	223	4	227	5	232	5	
917	237	5	242	4	246	5	251	5	256	4	261	5	265	5	270	5	275	5	280	4	
918	284	5	289	5	294	4	298	5	303	5	308	5	313	4	317	5	322	5	327	5	
919	332	4	96336	5	96341	5	96346	4	96350	5	96355	5	96360	5	96365	4	96369	5	96374	5	
920	96379	5	384	4	388	5	393	5	398	4	402	5	407	5	412	5	417	4	421	5	
921	426	5	431	4	435	5	440	5	445	5	450	4	454	5	459	5	464	4	468	5	
922	473	5	478	5	483	4	487	5	492	5	497	4	501	5	506	5	511	4	515	5	
923	520	5	525	5	530	4	534	5	539	5	544	4	548	5	553	5	558	4	562	5	
924	567	5	572	5	577	4	581	5	586	5	591	4	595	5	600	5	605	4	609	5	
925	614	5	619	5	624	4	96628	5	96633	5	96638	4	96642	5	96647	5	96652	4	96656	5	
926	96661	5	96666	4	96670	5	675	5	680	5	685	4	689	5	694	5	699	4	703	5	
927	708	5	713	4	717	5	722	5	727	4	731	5	736	5	741	4	745	5	750	5	
928	755	4	759	5	764	5	769	5	774	4	778	5	783	5	788	4	792	5	797	5	
929	802	4	806	5	811	5	816	4	820	5	825	5	830	4	834	5	839	5	844	4	
930	848	5	853	5	858	4	862	5	867	5	872	4	876	5	881	5	886	4	890	5	
931	895	5	900	4	904	5	909	5	914	4	918	5	923	5	928	4	932	5	937	5	
932	942	4	946	5	951	5	96956	4	96960	5	96965	5	96970	4	96974	5	96979	5	96984	4	
933	96988	5	96993	4	96997	5	97002	5	97007	4	97011	5	97016	5	97021	4	97025	5	97030	5	
934	97035	4	97039	5	97044	5	049	4	053	5	058	5	063	4	067	5	072	5	077	4	
935	081	5	086	4	090	5	095	5	100	4	104	5	109	5	114	4	118	5	123	5	
936	128	4	132	5	137	5	142	4	146	5	151	4	155	5	160	5	165	4	169	5	
937	174	5	179	4	183	5	188	4	192	5	197	5	202	4	206	5	211	5	216	4	
938	220	5	225	5	230	4	234	5	239	4	243	5	248	5	253	4	257	5	262	5	
939	267	4	271	5	276	4	280	5	285	5	290	4	294	5	299	5	304	4	308	5	
940	313	4	317	5	322	5	327	4	331	5	336	4	340	5	345	5	350	4	354	5	4
941	359	5	364	4	368	5	373	4	377	5	382	5	387	4	391	5	396	4	400	5	
942	97405	5	97410	4	97414	5	97419	5	97424	4	97428	5	97433	4	97437	5	97442	5	97447	4	1
943	451	5	456	4	460	5	465	5	470	4	474	5	479	4	483	5	488	5	493	4	2
944	497	5	502	4	506	5	511	5	516	4	520	5	525	4	529	5	534	5	539	4	3
945	543	5	548	4	552	5	557	5	562	4	566	5	571	4	575	5	580	5	585	4	4
946	589	5	594	4	598	5	603	4	607	5	612	5	617	4	621	5	626	4	630	5	5
947	635	5	640	4	644	5	649	4	653	5	658	5	663	4	667	5	672	5	676	5	6
948	681	4	685	5	690	5	695	4	699	5	704	4	708	5	713	4	717	5	722	5	7
949	727	4	731	5	736	4	740	5	745	4	749	5	754	5	759	4	763	5	97768	4	8
950	97772	5	97777	5	97782	4	97786	5	97791	4	97795	5	97800	4	97804	5	97809	4	97813	5	9
No.	0		1		2		3		4		5		6		7		8		9		10

ARMY AIR FORCES

Table II. Logarithms of Numbers—Continued

950

No.	0	d	1	d	2	d	3	d	4	d	5	d	6	d	7	d	8	d	9	d	Prop. Parts
950	97772	5	97777	5	97782	4	97786	5	97791	4	97795	5	97800	4	97804	5	97809	4	97813	5	5
951	818	5	823	4	827	5	832	4	836	5	841	4	845	5	850	4	855	5	859	4	1
952	864	5	868	4	873	4	877	5	882	4	886	5	891	4	896	5	900	4	905	5	2
953	909	5	914	4	918	5	923	4	928	5	932	4	937	5	941	4	946	5	950	4	3
954	97955	4	97959	5	97964	4	97968	5	97973	4	97978	5	97982	4	97987	5	97991	4	97996	5	4
955	98000	5	98005	4	98009	5	98014	4	98019	5	98023	4	98028	5	98032	4	98037	5	98041	4	5
956	046	4	050	5	055	4	059	5	064	4	068	5	073	4	078	5	082	4	087	5	6
957	091	5	096	4	100	5	105	4	109	5	114	4	118	5	123	4	127	5	132	4	7
958	137	4	141	5	146	4	150	5	155	4	159	5	164	4	168	5	173	4	177	5	8
959	182	4	186	5	191	4	195	5	200	4	204	5	209	4	214	5	218	4	223	5	9
960	227	5	232	4	236	5	241	4	245	5	250	4	254	5	259	4	263	5	268	4	10
961	272	5	277	4	281	5	286	4	290	5	295	4	299	5	304	4	308	5	313	4	5
962	98318	4	98322	5	98327	4	98331	5	98336	4	98340	5	98345	4	98349	5	98354	4	98358	5	6
963	363	4	367	5	372	4	376	5	381	4	385	5	390	4	394	5	399	4	403	5	7
964	408	4	412	5	417	4	421	5	426	4	430	5	435	4	439	5	444	4	448	5	8
965	453	4	457	5	462	4	466	5	471	4	475	5	480	4	484	5	489	4	493	5	9
966	498	4	502	5	507	4	511	5	516	4	520	5	525	4	529	5	534	4	538	5	10
967	543	4	547	5	552	4	556	5	561	4	565	5	570	4	574	5	579	4	583	5	
968	588	4	592	5	597	4	601	5	605	4	610	5	614	4	619	5	623	4	628	5	
969	632	5	637	4	641	5	98646	4	98650	5	98655	4	98659	5	98664	4	98668	5	98673	4	
970	98677	5	98682	4	98686	5	691	4	695	5	700	4	704	5	709	4	713	5	717	4	
971	722	4	726	5	731	4	735	5	740	4	744	5	749	4	753	5	758	4	762	5	
972	767	4	771	5	776	4	780	5	784	4	789	5	793	4	798	5	802	4	807	5	
973	811	5	816	4	820	5	825	4	829	5	834	4	838	5	843	4	847	5	851	4	
974	856	4	860	5	865	4	869	5	874	4	878	5	883	4	887	5	892	4	896	5	
975	900	5	905	4	909	5	914	4	918	5	923	4	927	5	932	4	936	5	941	4	
976	945	4	949	5	954	4	98958	5	98963	4	98967	5	98972	4	98976	5	98981	4	98985	5	
977	98989	4	98994	5	98998	4	99003	5	99007	4	99012	5	99016	4	99021	5	99025	4	99029	5	
978	99034	4	99038	5	99043	4	047	5	052	4	056	5	061	4	065	5	069	4	074	5	
979	078	5	083	4	087	5	092	4	096	5	100	4	105	5	109	4	114	5	118	4	
980	123	4	127	5	131	4	136	5	140	4	145	5	149	4	154	5	158	4	162	5	
981	167	4	171	5	176	4	180	5	185	4	189	5	193	4	198	5	202	4	207	5	
982	211	5	216	4	220	5	224	4	229	5	233	4	238	5	242	4	247	5	251	4	
983	255	5	260	4	264	5	269	4	273	5	277	4	282	5	286	4	291	5	295	4	
984	300	4	304	5	308	4	99313	5	99317	4	99322	5	99326	4	99330	5	99335	4	99339	5	
985	99344	4	99348	5	99352	4	357	5	361	4	366	5	370	4	374	5	379	4	383	5	
986	388	4	392	5	396	4	401	5	405	4	410	5	414	4	419	5	423	4	427	5	
987	432	4	436	5	441	4	445	5	449	4	454	5	458	4	463	5	467	4	471	5	
988	476	4	480	5	484	4	489	5	493	4	498	5	502	4	506	5	511	4	515	5	
989	520	4	524	5	528	4	533	5	537	4	542	5	546	4	550	5	555	4	559	5	
990	564	4	568	5	572	4	577	5	581	4	585	5	590	4	594	5	599	4	603	5	4
991	607	5	612	4	616	5	621	4	625	5	629	4	634	5	638	4	642	5	647	4	
992	99651	4	99656	5	99660	4	99664	5	99669	4	99673	5	99677	4	99682	5	99686	4	99691	5	
993	695	4	699	5	704	4	708	5	712	4	717	5	721	4	726	5	730	4	734	5	1
994	739	4	743	5	747	4	752	5	756	4	760	5	765	4	769	5	774	4	778	5	2
995	782	5	787	4	791	5	795	4	800	5	804	4	808	5	813	4	817	5	822	4	3
996	826	4	830	5	835	4	839	5	843	4	848	5	852	4	856	5	861	4	865	5	4
997	870	4	874	5	878	4	883	5	887	4	891	5	896	4	900	5	904	4	909	5	5
998	913	4	917	5	922	4	926	5	930	4	935	5	939	4	944	5	948	4	952	5	6
999	99957	4	99961	5	99965	4	99970	5	99974	4	99978	5	99983	4	99987	5	99991	4	99996	5	7
1000	00000	4	00004	5	00009	4	00013	5	00017	4	00022	5	00026	4	00030	5	00035	4	00039	5	8
No.	0		1		2		3		4		5		6		7		8		9		9

AIR NAVIGATION TABLES

Table III. MERIDIONAL PARTS OR INCREASED LATITUDES

M.	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	M.
0	0.0	59.6	119.2	178.9	238.6	298.3	358.2	418.2	478.3	538.6	0
1	1.0	60.6	20.2	79.9	39.6	99.3	59.2	19.2	79.3	39.6	1
2	2.0	61.6	21.2	80.8	40.6	300.3	60.2	20.2	80.3	40.6	2
3	3.0	62.6	22.2	81.8	41.6	01.3	61.2	21.2	81.3	41.6	3
4	4.0	63.6	23.2	82.8	42.5	02.3	62.2	22.2	82.3	42.6	4
5	5.0	64.6	24.2	83.8	43.5	303.3	363.2	423.2	483.3	543.6	5
6	6.0	65.6	25.2	84.8	44.5	04.3	64.2	24.2	84.3	44.6	6
7	7.0	66.5	26.2	85.8	45.5	05.3	65.2	25.2	85.3	45.6	7
8	7.9	67.5	27.2	86.8	46.5	06.3	66.2	26.2	86.3	46.6	8
9	8.9	68.5	28.2	87.8	47.5	07.3	67.2	27.2	87.3	47.6	9
10	9.9	69.5	29.1	88.8	48.5	308.3	368.2	428.2	488.3	548.6	10
11	10.9	70.5	30.1	89.8	49.5	09.3	69.2	29.2	89.3	49.6	11
12	11.9	71.5	31.1	90.8	50.5	10.3	70.2	30.2	90.4	50.6	12
13	12.9	72.5	32.1	91.8	51.5	11.3	71.2	31.2	91.4	51.7	13
14	13.9	73.5	33.1	92.8	52.5	12.3	72.2	32.2	92.4	52.7	14
15	14.9	74.5	34.1	93.8	53.5	313.3	373.2	433.2	493.4	553.7	15
16	15.9	75.5	35.1	94.8	54.5	14.3	74.2	34.2	94.4	54.7	16
17	16.9	76.5	36.1	95.8	55.5	15.3	75.2	35.2	95.4	55.7	17
18	17.9	77.5	37.1	96.8	56.5	16.3	76.2	36.2	96.4	56.7	18
19	18.9	78.5	38.1	97.8	57.5	17.3	77.2	37.2	97.4	57.7	19
20	19.9	79.5	39.1	98.8	58.5	318.3	378.2	438.2	498.4	558.7	20
21	20.9	80.5	40.1	99.7	59.5	19.3	79.2	39.2	99.4	59.7	21
22	21.9	81.5	41.1	200.7	60.5	20.3	80.2	40.2	500.4	60.7	22
23	22.8	82.4	42.1	01.7	61.5	21.3	81.2	41.2	01.4	61.7	23
24	23.8	83.4	43.1	02.7	62.5	22.3	82.2	42.2	02.4	62.7	24
25	24.8	84.4	44.1	203.7	63.5	323.3	383.2	443.2	503.4	563.7	25
26	25.8	85.4	45.1	04.7	64.5	24.3	84.2	44.2	04.4	64.7	26
27	26.8	86.4	46.0	05.7	65.5	25.3	85.2	45.2	05.4	65.7	27
28	27.8	87.4	47.0	06.7	66.5	26.3	86.2	46.2	06.4	66.8	28
29	28.8	88.4	48.0	07.7	67.4	27.3	87.2	47.2	07.4	67.8	29
30	29.8	89.4	49.0	208.7	68.4	328.3	388.2	448.2	508.4	568.8	30
31	30.8	90.4	50.0	09.7	69.4	29.3	89.2	49.2	09.4	69.8	31
32	31.8	91.4	51.0	10.7	70.4	30.3	90.2	50.2	10.4	70.8	32
33	32.8	92.4	52.0	11.7	71.4	31.3	91.2	51.2	11.4	71.8	33
34	33.8	93.4	53.0	12.7	72.4	32.3	92.2	52.2	12.4	72.8	34
35	34.8	94.4	54.0	213.7	73.4	333.3	393.2	453.2	513.4	573.8	35
36	35.8	95.4	55.0	14.7	74.4	34.3	94.2	54.3	14.5	74.8	36
37	36.7	96.4	56.0	15.7	75.4	35.3	95.2	55.3	15.5	75.8	37
38	37.7	97.3	57.0	16.7	76.4	36.2	96.2	56.3	16.5	76.8	38
39	38.7	98.3	58.0	17.7	77.4	37.2	97.2	57.3	17.5	77.8	39
40	39.7	99.3	59.0	218.7	78.4	338.2	398.2	458.3	518.5	578.8	40
41	40.7	100.3	60.0	19.7	79.4	39.2	99.2	59.3	19.5	79.9	41
42	41.7	01.3	61.0	20.6	80.4	40.2	400.2	60.3	20.5	80.9	42
43	42.7	02.3	62.0	21.6	81.4	41.2	01.2	61.3	21.5	81.9	43
44	43.7	03.3	63.0	22.6	82.4	42.2	02.2	62.3	22.5	82.9	44
45	44.7	104.3	64.0	223.6	83.4	343.2	403.2	463.3	523.5	583.9	45
46	45.7	05.3	65.0	24.6	84.4	44.2	04.2	64.3	24.5	84.9	46
47	46.7	06.3	66.0	25.6	85.4	45.2	05.2	65.3	25.5	85.9	47
48	47.7	07.3	67.0	26.6	86.4	46.2	06.2	66.3	26.5	86.9	48
49	48.7	08.3	68.0	27.6	87.4	47.2	07.2	67.3	27.5	87.9	49
50	49.7	109.3	69.0	228.6	88.4	348.2	408.2	468.3	528.5	588.9	50
51	50.7	10.3	69.9	29.6	89.4	49.2	09.2	69.3	29.5	89.9	51
52	51.6	11.3	70.9	30.6	90.4	50.2	10.2	70.3	30.5	90.9	52
53	52.6	12.3	71.9	31.6	91.4	51.2	11.2	71.3	31.5	91.9	53
54	53.6	13.2	72.9	32.6	92.4	52.2	12.2	72.3	32.5	93.0	54
55	54.6	114.2	73.9	233.6	93.4	353.2	413.2	473.3	533.5	594.0	55
56	55.6	15.2	74.9	34.6	94.4	54.2	14.2	74.3	34.6	95.0	56
57	56.6	16.2	75.9	35.6	95.4	55.2	15.2	75.3	35.6	96.0	57
58	57.6	17.2	76.9	36.6	96.3	56.2	16.2	76.3	36.6	97.0	58
59	58.6	18.2	77.9	37.6	97.3	57.2	17.2	77.3	37.6	98.0	59
M.	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	M.

NOTE.—Table III, Meridional parts or increased latitudes, was taken from Hydrographic Office Publication No. 9.

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Table III. Meridional parts or increased latitudes—Continued

M.	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	M.
0	599.0	659.6	720.5	781.5	842.8	904.4	966.3	1028.5	1091.0	1153.9	0
1	600.0	60.6	21.5	82.5	43.9	05.4	67.3	29.5	92.0	54.9	1
2	01.0	61.7	22.5	83.6	44.9	06.5	68.3	30.5	93.1	56.0	2
3	02.0	62.7	23.5	84.6	45.9	07.5	69.4	31.6	94.1	57.0	3
4	03.0	63.7	24.5	85.6	46.9	08.5	70.4	32.6	95.2	58.1	4
5	604.1	664.7	725.5	786.6	847.9	909.6	971.4	1033.7	1096.2	1159.1	5
6	05.1	65.7	26.6	87.6	49.0	10.6	72.5	34.7	97.3	60.2	6
7	06.1	66.7	27.6	88.7	50.0	11.6	73.5	35.7	98.3	61.2	7
8	07.1	67.7	28.6	89.7	51.0	12.6	74.6	36.8	99.4	62.3	8
9	08.1	68.7	29.6	90.7	52.0	13.7	75.6	37.8	1100.4	63.3	9
10	609.1	669.8	730.6	791.7	853.1	914.7	976.6	1038.9	1101.4	1164.4	10
11	10.1	70.8	31.6	92.7	54.1	15.7	77.7	39.9	02.5	65.4	11
12	11.1	71.8	32.7	93.8	55.1	16.8	78.7	40.9	03.5	66.5	12
13	12.1	72.8	33.7	94.8	56.1	17.8	79.7	42.0	04.6	67.5	13
14	13.1	73.8	34.7	95.8	57.2	18.8	80.8	43.0	05.6	68.6	14
15	614.1	674.8	735.7	796.8	858.2	919.8	981.8	1044.1	1106.7	1169.7	15
16	15.2	75.8	36.7	97.8	59.2	20.9	82.8	45.1	07.7	70.7	16
17	16.2	76.8	37.7	98.9	60.2	21.9	83.9	46.1	08.8	71.8	17
18	17.2	77.9	38.8	99.9	61.3	22.9	84.9	47.2	09.8	72.8	18
19	18.2	78.9	39.8	800.9	62.3	24.0	85.9	48.2	10.9	73.9	19
20	619.2	679.9	740.8	801.9	863.3	925.0	987.0	1049.3	1111.9	1174.9	20
21	20.2	80.9	41.8	02.9	64.3	26.0	88.0	50.3	13.0	76.0	21
22	21.2	81.9	42.8	04.0	65.4	27.1	89.0	51.3	14.0	77.0	22
23	22.2	82.9	43.8	05.0	66.4	28.1	90.1	52.4	15.0	78.1	23
24	23.2	83.9	44.9	06.0	67.4	29.1	91.1	53.4	16.1	79.1	24
25	624.2	684.9	745.9	807.0	868.5	930.1	992.1	1054.5	1117.1	1180.2	25
26	25.3	86.0	46.9	08.1	69.5	31.2	93.2	55.5	18.2	81.2	26
27	26.3	87.0	47.9	09.1	70.5	32.2	94.2	56.6	19.2	82.3	27
28	27.3	88.0	48.9	10.1	71.5	33.2	95.3	57.6	20.3	83.3	28
29	28.3	89.0	49.9	11.1	72.6	34.3	96.3	58.6	21.3	84.4	29
30	629.3	690.0	751.0	812.1	873.6	935.3	997.3	1059.7	1122.4	1185.5	30
31	30.3	91.0	52.0	13.2	74.6	36.3	98.4	60.7	23.4	86.5	31
32	31.3	92.0	53.0	14.2	75.6	37.4	99.4	61.8	24.5	87.6	32
33	32.3	93.1	54.0	15.2	76.7	38.4	1000.4	62.8	25.5	88.6	33
34	33.3	94.1	55.0	16.2	77.7	39.4	01.5	63.9	26.6	89.7	34
35	634.3	695.1	756.0	817.3	878.7	940.5	1002.5	1064.9	1127.6	1190.7	35
36	35.4	96.1	57.1	18.3	79.7	41.5	03.6	65.9	28.7	91.8	36
37	36.4	97.1	58.1	19.3	80.8	42.5	04.6	67.0	29.7	92.8	37
38	37.4	98.1	59.1	20.3	81.8	43.6	05.6	68.0	30.8	93.9	38
39	38.4	99.1	60.1	21.3	82.8	44.6	06.7	69.1	31.8	95.0	39
40	639.4	700.2	761.1	822.4	883.8	945.6	1007.7	1070.1	1132.9	1196.0	40
41	40.4	01.2	62.2	23.4	84.9	46.7	08.7	71.2	33.9	97.1	41
42	41.4	02.2	63.2	24.4	85.9	47.7	09.8	72.2	35.0	98.1	42
43	42.4	03.2	64.2	25.4	86.9	48.7	10.8	73.2	36.0	99.2	43
44	43.4	04.2	65.2	26.5	88.0	49.7	11.8	74.3	37.1	1200.2	44
45	644.5	705.2	766.2	827.5	889.0	950.8	1012.9	1075.3	1138.1	1201.3	45
46	45.5	06.2	67.3	28.5	90.0	51.8	13.9	76.4	39.2	02.3	46
47	46.5	07.3	68.3	29.5	91.0	52.8	15.0	77.4	40.2	03.4	47
48	47.5	08.3	69.3	30.5	92.1	53.9	16.0	78.5	41.3	04.5	48
49	48.5	09.3	70.3	31.6	93.1	54.9	17.0	79.5	42.3	05.5	49
50	649.5	710.3	771.3	832.6	894.1	955.9	1018.1	1080.5	1143.4	1206.6	50
51	50.5	11.3	72.3	33.6	95.2	57.0	19.1	81.6	44.4	07.6	51
52	51.5	12.3	73.4	34.6	96.2	58.0	20.2	82.6	45.5	08.7	52
53	52.5	13.4	74.4	35.7	97.2	59.0	21.2	83.7	46.5	09.7	53
54	53.6	14.4	75.4	36.7	98.2	60.1	22.2	84.7	47.6	10.8	54
55	654.6	715.4	776.4	837.7	899.3	961.1	1023.3	1085.8	1148.6	1211.8	55
56	55.6	16.4	77.4	38.7	990.3	62.1	24.3	86.8	49.7	12.9	56
57	56.6	17.4	78.5	39.8	01.3	63.2	25.3	87.9	50.7	14.0	57
58	57.6	18.4	79.5	40.8	02.3	64.2	26.4	88.9	51.8	15.0	58
59	58.6	19.4	80.5	41.8	03.4	65.2	27.4	89.9	52.8	16.1	59
M.	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	M.

AIR NAVIGATION TABLES

Table III. Meridional parts or increased latitudes—Continued

M.	20°	21°	22°	23°	24°	25°	26°	27°	28°	29°	M.
0	1217.1	1280.8	1344.9	1409.5	1474.5	1540.1	1606.2	1672.9	1740.2	1808.1	0
1	18.2	81.9	46.0	10.6	75.6	41.2	07.3	74.0	41.3	09.2	1
2	19.3	82.9	47.1	11.6	76.7	42.3	08.4	75.1	42.4	10.4	2
3	20.3	84.0	48.1	12.7	77.8	43.4	09.5	76.2	43.6	11.5	3
4	21.4	85.1	49.2	13.8	78.9	44.5	10.6	77.4	44.7	12.6	4
5	1222.4	1286.1	1350.3	1414.9	1480.0	1545.6	1611.7	1678.5	1745.8	1813.8	5
6	23.5	87.2	51.4	16.0	81.1	46.7	12.9	79.6	46.9	14.9	6
7	24.5	88.3	52.4	17.1	82.2	47.8	14.0	80.7	48.1	16.1	7
8	25.6	89.3	53.5	18.1	83.3	48.9	15.1	81.8	49.2	17.2	8
9	26.7	90.4	54.6	19.2	84.3	50.0	16.2	82.9	50.3	18.3	9
10	1227.7	1291.5	1355.7	1420.3	1485.4	1551.1	1617.3	1684.1	1751.5	1819.5	10
11	28.8	92.5	56.7	21.4	86.5	52.2	18.4	85.2	52.6	20.6	11
12	29.8	93.6	57.8	22.5	87.6	53.3	19.5	86.3	53.7	21.8	12
13	30.9	94.7	58.9	23.5	88.7	54.4	20.6	87.4	54.8	22.9	13
14	32.0	95.7	59.9	24.6	89.8	55.5	21.7	88.5	56.0	24.0	14
15	1233.0	1296.8	1361.0	1425.7	1490.9	1556.6	1622.8	1689.7	1757.1	1825.2	15
16	34.1	97.9	62.1	26.8	92.0	57.7	23.9	90.8	58.2	26.3	16
17	35.1	98.9	63.2	27.9	93.1	58.8	25.0	91.9	59.4	27.5	17
18	36.2	1300.0	64.2	29.0	94.2	59.9	26.2	93.0	60.5	28.6	18
19	37.3	01.1	65.3	30.0	95.2	61.0	27.3	94.1	61.6	29.7	19
20	1238.3	1302.1	1366.4	1431.1	1496.3	1562.1	1628.4	1695.3	1762.7	1830.9	20
21	39.4	03.2	67.5	32.2	97.4	63.2	29.5	96.4	63.9	32.0	21
22	40.4	04.3	68.5	33.3	98.5	64.3	30.6	97.5	65.0	33.2	22
23	41.5	05.3	69.6	34.4	99.6	65.4	31.7	98.6	66.1	34.3	23
24	42.6	06.4	70.7	35.4	1500.7	66.5	32.8	99.7	67.3	35.4	24
25	1243.6	1307.5	1371.8	1436.5	1501.8	1567.6	1633.9	1700.9	1768.4	1836.6	25
26	44.7	08.5	72.8	37.6	02.9	68.7	35.0	02.0	69.5	37.7	26
27	45.7	09.6	73.9	38.7	04.0	69.8	36.1	03.1	70.7	38.9	27
28	46.8	10.7	75.0	39.8	05.1	70.9	37.3	04.2	71.8	40.0	28
29	47.9	11.7	76.1	40.9	06.2	72.0	38.4	05.3	72.9	41.2	29
30	1248.9	1312.8	1377.1	1442.0	1507.3	1573.1	1639.5	1706.5	1774.1	1842.3	30
31	50.0	13.9	78.2	43.0	08.4	74.2	40.6	07.6	75.2	43.4	31
32	51.0	14.9	79.3	44.1	09.4	75.3	41.7	08.7	76.3	44.6	32
33	52.1	16.0	80.4	45.2	10.5	76.4	42.8	09.8	77.4	45.7	33
34	53.2	17.1	81.5	46.3	11.6	77.5	43.9	10.9	78.6	46.9	34
35	1254.2	1318.2	1382.5	1447.4	1512.7	1578.6	1645.0	1712.1	1779.7	1848.0	35
36	55.3	19.2	83.6	48.5	13.8	79.7	46.2	13.2	80.8	49.2	36
37	56.4	20.3	84.7	49.5	14.9	80.8	47.3	14.3	82.0	50.3	37
38	57.4	21.4	85.8	50.6	16.0	81.9	48.4	15.4	83.1	51.4	38
39	58.5	22.4	86.8	51.7	17.1	83.0	49.5	16.6	84.2	52.6	39
40	1259.5	1323.5	1387.9	1452.8	1518.2	1584.1	1650.6	1717.7	1785.4	1853.7	40
41	60.6	24.6	89.0	53.9	19.3	85.2	51.7	18.8	86.5	54.9	41
42	61.7	25.6	90.1	55.0	20.4	86.3	52.8	19.9	87.6	56.0	42
43	62.7	26.7	91.1	56.1	21.5	87.4	53.9	21.1	88.8	57.2	43
44	63.8	27.8	92.2	57.1	22.6	88.5	55.1	22.2	89.9	58.3	44
45	1264.9	1328.9	1393.3	1458.2	1523.7	1589.6	1656.2	1723.3	1791.1	1859.5	45
46	65.9	29.9	94.4	59.3	24.8	90.7	57.3	24.4	92.2	60.6	46
47	67.0	31.0	95.5	60.4	25.9	91.8	58.4	25.5	93.3	61.8	47
48	68.0	32.1	96.5	61.5	27.0	92.9	59.5	26.7	94.5	62.9	48
49	69.1	33.1	97.6	62.6	28.0	94.1	60.6	27.8	95.6	64.0	49
50	1270.2	1334.2	1398.7	1463.7	1529.1	1595.2	1661.7	1728.9	1796.7	1865.2	50
51	71.2	35.3	99.8	64.8	30.2	96.3	62.9	30.0	97.9	66.3	51
52	72.3	36.3	1400.9	65.8	31.3	97.4	64.0	31.2	99.0	67.5	52
53	73.4	37.4	01.9	66.9	32.4	98.5	65.1	32.3	1800.1	68.6	53
54	74.4	38.5	03.0	68.0	33.5	99.6	66.2	33.4	01.3	69.8	54
55	1275.5	1339.6	1404.1	1469.1	1534.6	1600.7	1667.3	1734.5	1802.4	1870.9	55
56	76.6	40.6	05.2	70.2	35.7	01.8	68.4	35.7	03.5	72.1	56
57	77.6	41.7	06.2	71.3	36.8	02.9	69.5	36.8	04.7	73.2	57
58	78.7	42.8	07.3	72.4	37.9	04.0	70.7	37.9	05.8	74.4	58
59	79.7	43.8	08.4	73.5	39.0	05.1	71.8	39.1	07.0	75.5	59
M.	20°	21°	22°	23°	24°	25°	26°	27°	28°	29°	M.

ARMY AIR FORCES

Table III. Meridional parts or increased latitudes—Continued

M.	30°	31°	32°	33°	34°	35°	36°	37°	38°	39°	M.
0	1876.7	1946.0	2016.0	2086.8	2158.4	2230.9	2304.2	2378.5	2453.8	2530.2	0
1	77.8	47.1	17.2	88.0	59.6	32.1	05.5	79.8	55.1	31.5	1
2	79.0	48.3	18.3	89.2	60.8	33.3	06.7	81.0	56.4	32.8	2
3	80.1	49.4	19.5	90.3	62.0	34.5	07.9	82.3	57.6	34.0	3
4	81.3	50.6	20.7	91.5	63.2	35.7	09.2	83.5	58.9	35.3	4
5	1882.4	1951.8	2021.9	2092.7	2164.4	2236.9	2310.4	2384.8	2460.2	2536.6	5
6	83.6	52.9	23.0	93.9	65.6	38.2	11.6	86.0	61.4	37.9	6
7	84.7	54.1	24.2	95.1	66.8	39.4	12.9	87.3	62.7	39.2	7
8	85.9	55.3	25.4	96.3	68.0	40.6	14.1	88.5	64.0	40.5	8
9	87.0	56.4	26.6	97.5	69.2	41.8	15.3	89.8	65.2	41.7	9
10	1888.2	1957.6	2027.7	2098.7	2170.4	2243.0	2316.5	2391.0	2466.5	2543.0	10
11	89.3	58.7	28.9	99.8	71.6	44.2	17.8	92.3	67.8	44.3	11
12	90.5	59.9	30.1	2101.0	72.8	45.5	19.0	93.5	69.0	45.6	12
13	91.6	61.1	31.3	02.2	74.0	46.7	20.3	94.8	70.3	46.9	13
14	92.8	62.2	32.4	03.4	75.2	47.9	21.5	96.0	71.6	48.2	14
15	1893.9	1963.4	2033.6	2104.6	2176.4	2249.1	2322.7	2397.3	2472.8	2549.5	15
16	95.1	64.6	34.8	05.8	77.6	50.3	24.0	98.5	74.1	50.7	16
17	96.2	65.7	36.0	07.0	78.8	51.6	25.2	99.8	75.4	52.0	17
18	97.4	66.9	37.1	08.2	80.0	52.8	26.4	2401.0	76.6	53.3	18
19	98.5	68.1	38.3	09.4	81.2	54.0	27.7	02.3	77.9	54.6	19
20	1899.7	1969.2	2039.5	2110.6	2182.5	2255.2	2328.9	2403.5	2479.2	2555.9	20
21	1900.8	70.4	40.7	11.8	83.7	56.4	30.1	04.8	80.4	57.2	21
22	02.0	71.5	41.8	12.9	84.9	57.7	31.4	06.0	81.7	58.5	22
23	03.1	72.7	43.0	14.1	86.1	58.9	32.6	07.3	83.0	59.8	23
24	04.3	73.9	44.2	15.3	87.3	60.1	33.8	08.5	84.3	61.0	24
25	1905.5	1975.0	2045.1	2116.5	2188.5	2261.3	2335.1	2409.8	2485.5	2562.3	25
26	06.6	76.2	46.6	17.7	89.7	62.5	36.3	11.1	86.8	63.6	26
27	07.8	77.4	47.7	18.9	90.9	63.8	37.6	12.3	88.1	64.9	27
28	08.9	78.5	48.9	20.1	92.1	65.0	38.8	13.6	89.3	66.2	28
29	10.1	79.7	50.1	21.3	93.3	66.2	40.0	14.8	90.6	67.5	29
30	1911.2	1980.9	2051.3	2122.5	2194.5	2267.4	2341.3	2416.1	2491.9	2568.8	30
31	12.4	82.0	52.5	23.7	95.7	68.7	42.5	17.3	93.2	70.1	31
32	13.5	83.2	53.6	24.9	96.9	69.9	43.7	18.6	94.4	71.4	32
33	14.7	84.4	54.8	26.1	98.1	71.1	45.0	19.8	95.7	72.7	33
34	15.8	85.5	56.0	27.3	99.4	72.3	46.2	21.1	97.0	73.9	34
35	1917.0	1986.7	2057.2	2128.5	2200.6	2273.5	2347.5	2422.3	2498.3	2575.2	35
36	18.2	87.9	58.4	29.6	01.8	74.8	48.7	23.6	99.5	76.5	36
37	19.3	89.1	59.5	30.8	03.0	76.0	49.9	24.9	2500.8	77.8	37
38	20.5	90.2	60.7	32.0	04.2	77.2	51.2	26.1	02.1	79.1	38
39	21.6	91.4	61.9	33.2	05.4	78.4	52.4	27.4	03.4	80.4	39
40	1922.8	1992.6	2063.1	2134.4	2206.6	2279.7	2353.7	2428.6	2504.6	2581.7	40
41	23.9	93.7	64.3	35.6	07.8	80.9	54.9	29.9	05.9	83.0	41
42	25.1	94.9	65.5	36.8	09.0	82.1	56.1	31.2	07.2	84.3	42
43	26.3	96.1	66.6	38.0	10.2	83.3	57.4	32.4	08.5	85.6	43
44	27.4	97.2	67.8	39.2	11.5	84.6	58.6	33.7	09.7	86.9	44
45	1928.6	1998.4	2069.0	2140.4	2212.7	2285.8	2359.9	2434.9	2511.0	2588.2	45
46	29.7	99.6	70.2	41.6	13.9	87.0	61.1	36.2	12.3	89.5	46
47	30.9	2000.7	71.4	42.8	15.1	88.3	62.4	37.4	13.6	90.8	47
48	32.0	01.9	72.6	44.0	16.3	89.5	63.6	38.7	14.8	92.1	48
49	33.2	03.1	73.7	45.2	17.5	90.7	64.8	40.0	16.1	93.4	49
50	1934.4	2004.3	2074.9	2146.4	2218.7	2291.9	2366.1	2441.2	2517.4	2594.7	50
51	35.5	05.4	76.1	47.6	19.9	93.2	67.3	42.5	18.7	96.0	51
52	36.7	06.6	77.3	48.8	21.1	94.4	68.6	43.7	20.0	97.3	52
53	37.8	07.8	78.5	50.0	22.4	95.6	69.8	45.0	21.2	98.5	53
54	39.0	08.9	79.7	51.2	23.6	96.9	71.1	46.3	22.5	99.8	54
55	1940.2	2010.1	2080.8	2152.4	2224.8	2298.1	2372.3	2447.5	2523.8	2601.1	55
56	41.3	11.3	82.0	53.6	26.0	99.3	73.6	48.8	25.1	02.4	56
57	42.5	12.5	83.2	54.8	27.2	2300.5	74.8	50.1	26.4	03.7	57
58	43.6	13.6	84.4	56.0	28.4	01.8	76.1	51.3	27.6	05.0	58
59	44.8	14.8	85.6	57.2	29.6	03.0	77.3	52.6	28.9	06.3	59
M.	30°	31°	32°	33°	34°	35°	36°	37°	38°	39°	M.

AIR NAVIGATION TABLES

Table III Meridional parts or increased latitudes—Continued

M.	40°	41°	42°	43°	44°	45°	46°	47°	48°	49°	M.
0	2607.6	2686.2	2766.0	2847.1	2929.5	3013.4	3098.7	3185.6	3274.1	3364.4	0
1	08.9	87.6	67.4	48.5	30.9	14.8	3100.1	87.1	75.6	65.9	1
2	10.2	88.9	68.7	49.9	32.3	16.2	01.6	88.5	77.1	67.4	2
3	11.5	90.2	70.1	51.2	33.7	17.6	03.0	90.0	78.6	69.0	3
4	12.8	91.5	71.4	52.6	35.1	19.0	04.4	91.4	80.1	70.5	4
5	2614.1	2692.8	2772.8	2853.9	2936.5	3020.4	3105.9	3192.9	3281.6	3372.0	5
6	15.4	94.2	74.1	55.3	37.9	21.8	07.3	94.4	83.1	73.5	6
7	16.8	95.5	75.4	56.7	39.3	23.3	08.8	95.8	84.6	75.1	7
8	18.1	96.8	76.8	58.0	40.6	24.7	10.2	97.3	86.1	76.6	8
9	19.4	98.1	78.1	59.4	42.0	26.1	11.6	98.8	87.6	78.1	9
10	2620.7	2699.5	2779.5	2860.8	2943.4	3027.5	3113.1	3200.2	3289.0	3379.6	10
11	22.0	2700.8	80.8	62.1	44.8	28.9	14.5	01.7	90.5	81.2	11
12	23.3	02.1	82.2	63.5	46.2	30.3	16.0	03.2	92.0	82.7	12
13	24.6	03.4	83.5	64.9	47.6	31.7	17.4	04.6	93.5	84.2	13
14	25.9	04.8	84.8	66.2	49.0	33.2	18.8	06.1	95.0	85.7	14
15	2627.2	2706.1	2786.2	2867.6	2950.4	3034.6	3120.3	3207.6	3296.5	3387.3	15
16	28.5	07.4	87.5	69.0	51.8	36.0	21.7	09.0	98.0	88.8	16
17	29.8	08.7	88.9	70.3	53.2	37.4	23.2	10.5	99.5	90.3	17
18	31.1	10.1	90.2	71.7	54.5	38.8	24.6	12.0	3301.0	91.8	18
19	32.4	11.4	91.6	73.1	55.9	40.2	26.0	13.4	02.5	93.4	19
20	2633.7	2712.7	2792.9	2874.4	2957.3	3041.7	3127.5	3214.9	3304.0	3394.9	20
21	35.0	14.0	94.3	75.8	58.7	43.1	28.9	16.4	05.5	96.4	21
22	36.3	15.4	95.6	77.2	60.1	44.5	30.4	17.9	07.0	98.0	22
23	37.6	16.7	97.0	78.6	61.5	45.9	31.8	19.3	08.5	99.5	23
24	38.9	18.0	98.3	79.9	62.9	47.3	33.3	20.8	10.0	3401.0	24
25	2640.2	2719.3	2799.7	2881.3	2964.3	3048.7	3134.7	3222.3	3311.5	3402.6	25
26	41.6	20.7	2801.0	82.7	65.7	50.2	36.2	23.7	13.0	04.1	26
27	42.9	22.0	02.4	84.0	67.1	51.6	37.6	25.2	14.5	05.6	27
28	44.2	23.3	03.7	85.4	68.5	53.0	39.0	26.7	16.0	07.2	28
29	45.5	24.7	05.1	86.8	69.9	54.4	40.5	28.2	17.5	08.7	29
30	2646.8	2726.0	2806.4	2888.2	2971.3	3055.9	3141.9	3229.6	3319.0	3410.2	30
31	48.1	27.3	07.8	89.5	72.7	57.3	43.4	31.1	20.5	11.8	31
32	49.4	28.6	09.1	90.9	74.1	58.7	44.8	32.6	22.1	13.3	32
33	50.7	30.0	10.5	92.3	75.5	60.1	46.3	34.1	23.6	14.8	33
34	52.0	31.3	11.8	93.7	76.9	61.5	47.7	35.6	25.1	16.4	34
35	2653.3	2732.6	2813.2	2895.0	2978.3	3063.0	3149.2	3237.0	3326.6	3417.9	35
36	54.7	34.0	14.5	96.4	79.7	64.4	50.6	38.5	28.1	19.5	36
37	56.0	35.3	15.9	97.8	81.1	65.8	52.1	40.0	29.6	21.0	37
38	57.3	36.6	17.2	99.2	82.5	67.2	53.5	41.5	31.1	22.5	38
39	58.6	38.0	18.6	2900.5	83.9	68.7	55.0	42.9	32.6	24.1	39
40	2659.9	2739.3	2820.0	2901.9	2985.3	3070.1	3156.4	3244.4	3334.1	3425.6	40
41	61.2	40.6	21.3	03.3	86.7	71.5	57.9	45.9	35.6	27.2	41
42	62.5	42.0	22.7	04.7	88.1	72.9	59.4	47.4	37.1	28.7	42
43	63.9	43.3	24.0	06.1	89.5	74.4	60.8	48.9	38.6	30.2	43
44	65.2	44.6	25.4	07.4	90.9	75.8	62.3	50.3	40.2	31.8	44
45	2666.5	2746.0	2826.7	2908.8	2992.3	3077.2	3163.7	3251.8	3341.7	3433.3	45
46	67.8	47.3	28.1	10.2	93.7	78.7	65.2	53.3	43.2	34.9	46
47	69.1	48.6	29.4	11.6	95.1	80.1	66.6	54.8	44.7	36.4	47
48	70.4	50.0	30.8	13.0	96.5	81.5	68.1	56.3	46.2	38.0	48
49	71.7	51.3	32.2	14.3	97.9	82.9	69.5	57.8	47.7	39.5	49
50	2673.1	2752.7	2833.5	2915.7	2999.3	3084.4	3171.0	3259.3	3349.2	3441.0	50
51	74.4	54.0	34.9	17.1	3000.7	85.8	72.5	60.7	50.8	42.6	51
52	75.7	55.3	36.2	18.5	02.1	87.2	73.9	62.2	52.3	44.1	52
53	77.0	56.7	37.6	19.9	03.5	88.7	75.4	63.7	53.8	45.7	53
54	78.3	58.0	39.0	21.2	04.9	90.1	76.8	65.2	55.3	47.2	54
55	2679.6	2759.3	2840.3	2922.6	3006.3	3091.5	3178.3	3266.7	3356.8	3448.8	55
56	81.0	60.7	41.7	24.0	07.7	93.0	79.7	68.2	58.3	50.3	56
57	82.3	62.0	43.0	25.4	09.2	94.4	81.2	69.7	59.9	51.9	57
58	83.6	63.4	44.4	26.8	10.6	95.8	82.7	71.1	61.4	53.4	58
59	84.9	64.7	45.8	28.2	12.0	97.3	84.1	72.6	62.9	55.0	59
M.	40°	41°	42°	43°	44°	45°	46°	47°	48°	49°	M.

ARMY AIR FORCES

Table III. Meridional parts or increased latitudes—Continued

M.	50°	51°	52°	53°	54°	55°	56°	57°	58°	59°	M.
0	3456.5	3550.6	3646.7	3745.1	3845.7	3948.8	4054.5	4163.0	4274.4	4389.1	0
1	58.1	52.2	48.4	46.7	47.4	50.5	56.3	64.8	76.3	91.0	1
2	59.6	53.8	50.0	48.4	49.1	52.3	58.1	66.6	78.2	92.9	2
3	61.2	55.4	51.6	50.0	50.8	54.0	59.8	68.5	80.1	94.9	3
4	62.7	56.9	53.2	51.7	52.5	55.7	61.6	70.3	82.0	96.8	4
5	3464.3	3558.5	3654.8	3753.4	3854.2	3957.5	4063.4	4172.1	4283.9	4398.8	5
6	65.9	60.1	56.5	55.0	55.9	59.2	65.2	74.0	85.7	4400.7	6
7	67.4	61.7	58.1	56.7	57.6	61.0	67.0	75.8	87.6	02.6	7
8	69.0	63.3	59.7	58.3	59.3	62.7	68.8	77.7	89.5	04.6	8
9	70.5	64.9	61.3	60.0	61.0	64.5	70.6	79.5	91.4	06.5	9
10	3472.1	3566.5	3663.0	3761.7	3862.7	3966.2	4072.4	4181.3	4293.3	4408.5	10
11	73.6	68.1	64.6	63.3	64.4	68.0	74.2	83.2	95.2	10.4	11
12	75.2	69.7	66.2	65.0	66.1	69.7	76.0	85.0	97.1	12.4	12
13	76.7	71.3	67.9	66.7	67.8	71.5	77.7	86.9	99.0	14.3	13
14	78.3	72.8	69.5	68.3	69.5	73.2	79.5	88.7	4300.9	16.3	14
15	3479.9	3574.4	3671.1	3770.0	3871.2	3975.0	4081.3	4190.6	4302.8	4418.2	15
16	81.4	76.0	72.7	71.7	72.9	76.7	83.1	92.4	04.7	20.2	16
17	83.0	77.6	74.4	73.3	74.6	78.5	84.9	94.2	06.6	22.1	17
18	84.5	79.2	76.0	75.0	76.3	80.2	86.7	96.1	08.5	24.1	18
19	86.1	80.8	77.6	76.7	78.1	82.0	88.5	97.9	10.4	26.1	19
20	3487.7	3582.4	3679.3	3778.3	3879.8	3983.7	4090.3	4199.8	4312.3	4428.0	20
21	89.2	84.0	80.9	80.0	81.5	85.5	92.1	4201.6	14.2	30.0	21
22	90.8	85.6	82.5	81.7	83.2	87.2	93.9	03.5	16.1	31.9	22
23	92.4	87.2	84.2	83.3	84.9	89.0	95.7	05.3	18.0	33.9	23
24	93.9	88.8	85.8	85.0	86.6	90.7	97.5	07.2	19.9	35.8	24
25	3495.5	3590.4	3687.4	3786.7	3888.3	3992.5	4099.3	4209.0	4321.8	4437.8	25
26	97.1	92.0	89.1	88.4	90.0	94.3	4101.1	10.9	23.7	39.8	26
27	98.6	93.6	90.7	90.0	91.8	96.0	02.9	12.8	25.6	41.7	27
28	3500.2	95.2	92.3	91.7	93.5	97.8	04.8	14.6	27.5	43.7	28
29	01.8	96.8	94.0	93.4	95.2	99.5	06.6	16.5	29.4	45.7	29
30	3503.3	3598.4	3695.6	3795.1	3896.9	4001.3	4108.4	4218.3	4331.3	4447.6	30
31	04.9	3600.0	97.3	96.8	98.6	03.1	10.2	20.2	33.2	49.6	31
32	06.5	01.6	98.9	98.4	3900.4	04.8	12.0	22.0	35.2	51.6	32
33	08.0	03.2	3700.5	3800.1	02.1	06.6	13.8	23.9	37.1	53.5	33
34	09.6	04.8	02.2	01.8	03.8	08.3	15.6	25.8	39.0	55.5	34
35	3511.2	3606.4	3703.8	3803.5	3905.5	4010.1	4117.4	4227.6	4340.9	4457.5	35
36	12.7	08.0	05.5	05.1	07.2	11.9	19.2	29.5	42.8	59.4	36
37	14.3	09.6	07.1	06.8	09.0	13.6	21.0	31.3	44.7	61.4	37
38	15.9	11.2	08.7	08.5	10.7	15.4	22.9	33.2	46.6	63.4	38
39	17.5	12.8	10.4	10.2	12.4	17.2	24.7	35.1	48.6	65.4	39
40	3519.0	3614.5	3712.0	3811.9	3914.1	4018.9	4126.5	4236.9	4350.5	4467.3	40
41	20.6	16.1	13.7	13.6	15.9	20.7	28.3	38.8	52.4	69.3	41
42	22.2	17.7	15.3	15.2	17.6	22.5	30.1	40.7	54.3	71.3	42
43	23.7	19.3	17.0	17.0	19.3	24.3	31.9	42.5	56.2	73.3	43
44	25.3	20.9	18.6	18.6	21.0	26.0	33.8	44.4	58.2	75.3	44
45	3526.9	3622.5	3720.3	3820.3	3922.8	4027.8	4135.6	4246.3	4360.1	4477.2	45
46	28.5	24.1	21.9	22.0	24.5	29.6	37.4	48.1	62.0	79.2	46
47	30.1	25.7	23.6	23.7	26.2	31.4	39.2	50.0	63.9	81.2	47
48	31.6	27.3	25.2	25.4	28.0	33.1	41.0	51.9	65.9	83.2	48
49	33.2	29.0	26.9	27.1	29.7	34.9	42.9	53.8	67.8	85.2	49
50	3534.8	3630.6	3728.5	3828.7	3931.4	4036.7	4144.7	4255.6	4369.7	4487.2	50
51	36.4	32.2	30.2	30.4	33.2	38.5	46.5	57.5	71.7	89.1	51
52	37.9	33.8	31.8	32.1	34.9	40.2	48.3	59.4	73.6	91.1	52
53	39.5	35.4	33.5	33.8	36.6	42.0	50.2	61.3	75.5	93.1	53
54	41.1	37.0	35.1	35.5	38.4	43.8	52.0	63.1	77.4	95.1	54
55	3542.7	3638.6	3736.8	3837.2	3940.1	4045.6	4153.8	4265.0	4379.4	4497.1	55
56	44.3	40.3	38.4	38.9	41.8	47.4	55.7	66.9	81.3	99.1	56
57	45.9	41.9	40.1	40.6	43.6	49.1	57.5	68.8	83.2	4501.1	57
58	47.4	43.5	41.7	42.3	45.3	50.9	59.3	70.7	85.2	03.1	58
59	49.0	45.1	43.4	45.0	47.0	52.7	61.1	72.5	87.1	05.1	59
M.	50°	51°	52°	53°	54°	55°	56°	57°	58°	59°	M.

AIR NAVIGATION TABLES

Table III. Meridional parts or increased latitudes—Continued

M.	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	M.
0	4507.1	4628.7	4754.3	4884.1	5018.4	5157.6	5302.1	5452.4	5609.1	5772.7	0
1	09.1	30.8	56.4	86.3	120.6	159.9	204.6	255.0	311.8	375.5	1
2	11.1	32.9	58.6	88.5	122.9	162.3	207.0	257.6	314.4	378.3	2
3	13.1	34.9	60.7	90.7	125.2	164.7	209.5	260.1	317.1	381.1	3
4	15.1	37.0	62.8	92.9	127.5	167.0	211.9	262.7	319.8	383.8	4
5	17.1	39.0	64.9	95.1	129.8	169.4	214.4	265.2	322.4	386.6	5
6	19.1	41.1	67.1	97.3	132.1	171.8	216.9	267.8	325.1	389.4	6
7	21.1	43.2	69.2	99.5	134.3	174.2	219.3	270.4	327.8	392.2	7
8	23.1	45.2	71.3	101.7	136.6	176.5	221.8	272.9	330.5	395.1	8
9	25.1	47.3	73.5	103.9	138.9	178.9	224.3	275.5	333.2	397.9	9
10	27.1	49.4	75.6	106.1	141.2	181.3	226.7	277.1	335.9	400.7	10
11	29.1	51.5	77.8	108.3	143.5	183.7	229.2	280.7	338.5	403.5	11
12	31.1	53.5	79.9	110.5	145.8	186.0	231.7	283.2	341.2	406.3	12
13	33.1	55.6	82.0	112.8	148.1	188.4	234.2	285.8	343.9	409.1	13
14	35.1	57.7	84.2	115.0	150.4	190.8	236.6	288.4	346.6	411.9	14
15	37.1	59.7	86.3	117.2	152.7	193.2	239.1	291.0	349.3	414.7	15
16	39.2	61.8	88.5	119.4	155.0	195.6	241.6	293.6	352.0	417.6	16
17	41.2	63.9	90.6	121.6	157.3	198.0	244.1	296.2	354.7	420.4	17
18	43.2	66.0	92.8	123.9	159.6	200.4	246.6	298.7	357.4	423.2	18
19	45.2	68.1	94.9	126.1	161.9	202.7	249.1	301.3	360.1	426.0	19
20	47.2	70.1	97.1	128.3	164.2	205.1	251.5	303.9	362.8	428.9	20
21	49.2	72.2	99.2	130.5	166.5	207.5	254.0	306.5	365.5	431.7	21
22	51.3	74.3	101.4	132.8	168.8	209.9	256.5	309.1	368.2	434.5	22
23	53.3	76.4	103.5	135.0	171.1	212.3	259.0	311.7	370.9	437.4	23
24	55.3	78.5	105.7	137.2	173.4	214.7	261.5	314.3	373.7	440.2	24
25	57.3	80.6	107.8	139.4	175.7	217.1	264.0	316.9	376.4	443.0	25
26	59.3	82.6	110.0	141.7	178.1	219.5	266.5	319.5	379.1	445.9	26
27	61.4	84.7	112.1	143.9	180.4	221.9	269.0	322.1	381.8	448.7	27
28	63.4	86.8	114.3	146.1	182.7	224.3	271.5	324.7	384.5	451.6	28
29	65.4	88.9	116.5	148.4	185.0	226.7	274.0	327.3	387.3	454.4	29
30	67.4	91.0	118.6	150.6	187.3	229.1	276.5	329.9	390.0	457.3	30
31	69.5	93.1	120.8	152.9	189.6	231.6	279.0	332.5	392.7	460.1	31
32	71.5	95.2	123.0	155.1	192.0	234.0	281.5	335.2	395.4	463.0	32
33	73.5	97.3	125.1	157.3	194.3	236.4	284.0	337.8	398.2	465.9	33
34	75.6	99.4	127.3	159.6	196.6	238.8	286.5	340.4	400.9	468.7	34
35	77.6	101.5	129.5	161.8	198.9	241.2	289.1	343.0	403.6	471.6	35
36	79.6	103.6	131.6	164.1	201.3	243.6	291.6	345.6	406.4	474.4	36
37	81.7	105.7	133.8	166.3	203.6	246.0	294.1	348.3	409.1	477.3	37
38	83.7	107.8	136.0	168.6	205.9	248.5	296.6	350.9	411.9	480.2	38
39	85.7	109.9	138.1	170.8	208.3	250.9	299.1	353.5	414.6	483.1	39
40	87.8	112.0	140.3	173.1	210.6	253.3	301.6	356.1	417.3	485.9	40
41	89.8	114.1	142.5	175.3	212.9	255.7	304.2	358.8	420.1	488.8	41
42	91.8	116.2	144.7	177.6	215.3	258.2	306.7	361.4	422.8	491.7	42
43	93.9	118.3	146.8	179.8	217.6	260.6	309.2	364.0	425.6	494.6	43
44	95.9	120.4	149.0	182.1	219.9	263.0	311.8	366.7	428.3	497.4	44
45	98.0	122.5	151.2	184.3	222.3	265.4	314.3	369.3	431.1	500.3	45
46	100.0	124.6	153.4	186.6	224.6	267.9	316.8	371.9	433.9	503.2	46
47	102.1	126.7	155.6	188.9	227.0	270.3	319.3	374.6	436.6	506.1	47
48	104.1	128.9	157.8	191.1	229.3	272.8	321.9	377.2	439.4	509.0	48
49	106.1	131.0	159.9	193.4	231.7	275.2	324.4	379.9	442.1	511.9	49
50	108.2	133.1	162.1	195.6	234.0	277.6	327.0	382.5	444.9	514.8	50
51	110.2	135.2	164.3	197.9	236.4	280.1	329.5	385.2	447.7	517.7	51
52	112.3	137.3	166.5	200.2	238.7	282.5	332.0	387.8	450.4	520.6	52
53	114.3	139.4	168.7	202.4	241.1	285.0	334.6	390.5	453.2	523.5	53
54	116.4	141.6	170.9	204.7	243.4	287.4	337.1	393.1	456.0	526.4	54
55	118.5	143.7	173.1	207.0	245.8	289.8	340.7	395.8	458.8	529.3	55
56	120.5	145.8	175.3	209.3	248.1	292.3	343.2	398.4	461.5	532.2	56
57	122.6	147.9	177.5	211.5	250.5	294.7	345.8	401.1	464.3	535.1	57
58	124.6	150.0	179.7	213.8	252.8	297.2	348.3	403.8	467.1	538.1	58
59	126.7	152.2	181.9	216.1	255.2	299.7	350.9	406.4	469.9	541.0	59
M.	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	M.

ARMY AIR FORCES

Table III. Meridional parts or increased latitudes—Continued

M.	70°	71°	72°	73°	74°	75°	76°	77°	78°	79°	M.
0	5943.9	6123.5	6312.5	6512.0	6723.2	6947.7	7187.3	7444.4	7721.6	8022.7	0
1	46.8	26.6	15.8	15.4	26.8	51.6	91.5	48.8	26.4	27.9	1
2	49.7	29.7	19.0	18.9	30.5	55.4	95.6	53.3	31.3	33.2	2
3	52.7	32.8	22.3	22.3	34.1	59.3	99.7	57.7	36.1	38.5	3
4	55.6	35.8	25.5	25.7	37.7	63.2	7203.9	62.2	40.9	43.7	4
5	5958.5	6138.9	6328.8	6529.1	6741.4	6967.1	7208.0	7466.7	7745.8	8049.0	5
6	61.5	42.0	32.0	32.6	45.0	70.9	12.2	71.1	50.6	54.3	6
7	64.4	45.1	35.3	36.0	48.7	74.8	16.4	75.6	55.5	59.6	7
8	67.3	48.2	38.5	39.5	52.3	78.7	20.5	80.1	60.3	64.9	8
9	70.8	51.3	41.8	42.9	56.0	82.6	24.7	84.6	65.2	70.2	9
10	5973.2	6154.4	6345.0	6546.4	6759.7	6986.5	7228.9	7489.1	7770.1	8075.5	10
11	76.2	57.5	48.3	49.8	63.3	90.4	33.1	93.6	74.9	80.8	11
12	79.1	60.6	51.6	53.3	67.0	94.3	37.3	98.1	79.8	86.1	12
13	82.1	63.7	54.8	56.7	70.7	98.3	41.5	7502.6	84.7	91.5	13
14	85.0	66.8	58.1	60.2	74.3	7002.2	45.7	07.1	89.6	96.8	14
15	5988.0	6169.9	6361.4	6563.7	6778.0	7006.1	7249.9	7511.7	7794.5	8102.2	15
16	90.9	73.0	64.7	67.1	81.7	10.0	54.1	16.2	99.4	07.5	16
17	93.9	76.1	67.9	70.6	85.4	14.0	58.3	20.7	7804.3	12.9	17
18	96.9	79.2	71.2	74.1	89.1	17.9	62.5	25.3	09.3	18.3	18
19	99.8	82.3	74.5	77.6	92.8	21.8	66.7	29.8	14.2	23.7	19
20	6002.8	6185.5	6377.8	6581.0	6796.5	7025.8	7270.9	7534.4	7819.1	8129.1	20
21	05.8	88.6	81.1	84.5	6800.2	29.7	75.2	38.9	24.1	34.5	21
22	08.7	91.7	84.4	88.0	03.9	33.7	79.4	43.5	29.0	39.9	22
23	11.7	94.8	87.7	91.5	07.6	37.7	83.7	48.1	34.0	45.3	23
24	14.7	98.0	91.0	95.0	11.3	41.6	87.9	52.7	39.0	50.8	24
25	6017.7	6201.1	6394.3	6598.5	6815.0	7045.6	7292.2	7557.3	7844.0	8156.2	25
26	20.7	04.2	97.6	6602.0	18.8	49.6	96.4	61.8	48.9	61.6	26
27	23.6	07.4	6400.9	05.5	22.5	53.5	7300.7	66.4	53.9	67.1	27
28	26.6	10.5	04.3	09.0	26.2	57.5	05.0	71.0	58.9	72.6	28
29	29.6	13.7	07.6	12.5	30.0	61.5	09.2	75.7	63.9	78.0	29
30	6032.6	6216.8	6410.9	6616.1	6833.7	7065.5	7313.5	7580.3	7868.9	8183.5	30
31	35.6	20.0	14.2	19.6	37.4	69.5	17.8	84.9	74.0	89.0	31
32	38.6	23.1	17.6	23.1	41.2	73.5	22.1	89.5	79.0	94.5	32
33	41.6	26.3	20.9	26.6	44.9	77.5	26.4	94.2	84.0	8200.0	33
34	44.6	29.4	24.2	30.2	48.7	81.5	30.7	98.8	89.1	05.5	34
35	6047.6	6232.6	6427.6	6633.7	6852.4	7085.5	7335.0	7603.4	7894.1	8211.1	35
36	50.6	35.8	30.9	37.2	56.2	89.5	39.3	08.1	99.2	16.6	36
37	53.6	38.9	34.2	40.8	60.0	93.5	43.6	12.8	7904.2	22.1	37
38	56.6	42.1	37.6	44.3	63.7	97.6	47.9	17.4	09.3	27.7	38
39	59.7	45.3	40.9	47.9	67.5	7101.6	52.3	22.1	14.4	33.3	39
40	6062.7	6248.4	6444.3	6651.4	6871.3	7105.6	7356.6	7626.8	7919.4	8238.8	40
41	65.7	51.6	47.6	55.0	75.1	09.7	60.9	31.4	24.5	44.4	41
42	68.7	54.8	51.0	58.5	78.9	13.7	65.3	36.1	29.6	50.0	42
43	71.7	58.0	54.4	62.1	82.6	17.8	69.6	40.8	34.7	55.6	43
44	74.8	61.2	57.7	65.7	86.4	21.8	74.0	45.5	39.9	61.2	44
45	6077.8	6264.4	6461.1	6669.2	6890.2	7125.9	7378.3	7650.2	7945.0	8266.8	45
46	80.8	67.6	64.5	72.8	94.0	29.9	82.7	55.0	50.1	72.4	46
47	83.9	70.8	67.8	76.4	97.8	34.0	87.1	59.7	55.2	78.1	47
48	86.9	74.0	71.2	80.0	6901.7	38.1	91.4	64.4	60.4	83.7	48
49	89.9	77.2	74.6	83.5	05.5	42.2	95.8	69.1	65.5	89.3	49
50	6093.0	6280.4	6478.0	6687.1	6909.3	7146.2	7400.2	7673.9	7970.7	8295.0	50
51	96.0	83.6	81.4	90.7	13.1	50.3	04.6	78.6	75.9	8300.7	51
52	99.1	86.8	84.8	94.3	16.9	54.4	09.0	83.4	81.0	06.4	52
53	6102.1	90.0	88.2	97.9	20.8	58.5	13.4	88.1	86.2	12.0	53
54	05.2	93.2	91.6	6701.5	24.6	62.6	17.8	92.9	91.4	17.7	54
55	6108.2	6296.4	6495.0	6705.1	6928.4	7166.7	7422.2	7697.7	7996.6	8323.4	55
56	11.3	99.6	98.4	08.7	32.3	70.8	26.6	7702.5	8001.8	29.2	56
57	14.3	6302.9	6501.8	12.4	36.1	75.0	31.1	07.2	07.0	34.9	57
58	17.4	06.1	05.2	16.0	40.0	79.1	35.5	12.0	12.2	40.6	58
59	20.5	09.3	08.6	19.6	43.8	83.2	39.9	16.8	17.5	46.4	59
M.	70°	71°	72°	73°	74°	75°	76°	77°	78°	79°	M.

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Table IV. REDUCTION OF LOCAL CIVIL TIME TO STANDARD MERIDIAN TIME, AND THE REVERSE

[If local meridian is east of standard meridian, subtract from local civil time, or add to standard meridian time. If local meridian is west of standard meridian, add to local civil time, or subtract from standard meridian time]

Difference of longitude between local meridian and standard meridian	Reduction to be applied to local civil time	Difference of longitude between local meridian and standard meridian	Reduction to be applied to local civil time
° ' ° '	Minutes	° ' ° '	Minutes
0 00 to 0 07	0	7 23 to 7 37	30
0 08 to 0 22	1	7 38 to 7 52	31
0 23 to 0 37	2	7 53 to 8 07	32
0 38 to 0 52	3	8 08 to 8 22	33
0 53 to 1 07	4	8 23 to 8 37	34
1 08 to 1 22	5	8 38 to 8 52	35
1 23 to 1 37	6	8 53 to 9 07	36
1 38 to 1 52	7	9 08 to 9 22	37
1 53 to 2 07	8	9 23 to 9 37	38
2 08 to 2 22	9	9 38 to 9 52	39
2 23 to 2 37	10	9 53 to 10 07	40
2 38 to 2 52	11	10 08 to 10 22	41
2 53 to 3 07	12	10 23 to 10 37	42
3 08 to 3 22	13	10 38 to 10 52	43
3 23 to 3 37	14	10 53 to 11 07	44
3 38 to 3 52	15	11 08 to 11 22	45
3 53 to 4 07	16	11 23 to 11 37	46
4 08 to 4 22	17	11 38 to 11 52	47
4 23 to 4 37	18	11 53 to 12 07	48
4 38 to 4 52	19	12 08 to 12 22	49
4 53 to 5 07	20	12 23 to 12 37	50
5 08 to 5 22	21	12 38 to 12 52	51
5 23 to 5 37	22	12 53 to 13 07	52
5 38 to 5 52	23	13 08 to 13 22	53
5 53 to 6 07	24	13 23 to 13 37	54
6 08 to 6 22	25	13 38 to 13 52	55
6 23 to 6 37	26	13 53 to 14 07	56
6 38 to 6 52	27	14 08 to 14 22	57
6 53 to 7 07	28	14 23 to 14 37	58
7 08 to 7 22	29	14 38 to 14 52	59

NOTE. Table IV, reduction of local civil time to standard meridian time, and the reverse, was taken from Hydrographic Office publication No. 9.

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Table V. ALTITUDE-PRESSURE TABLE—FEET-INCHES

P Inches	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
28.0	1824	1814	1805	1795	1785	1776	1766	1756	1746	1737
28.1	1727	1717	1707	1698	1688	1678	1668	1659	1649	1639
28.2	1630	1620	1610	1601	1591	1581	1572	1562	1552	1542
28.3	1533	1523	1513	1504	1494	1484	1475	1465	1456	1446
28.4	1436	1427	1417	1407	1398	1388	1378	1369	1359	1350
28.5	1340	1330	1321	1311	1302	1292	1282	1273	1263	1254
28.6	1244	1234	1225	1215	1206	1196	1186	1177	1167	1158
28.7	1148	1139	1129	1120	1110	1100	1091	1081	1072	1062
28.8	1053	1043	1034	1024	1015	1005	995	986	976	967
28.9	957	948	938	929	919	910	900	891	881	872
29.0	863	853	844	834	825	815	806	796	787	777
29.1	768	758	749	739	730	721	711	702	692	683
29.2	673	664	655	645	636	626	617	607	598	589
29.3	579	570	560	551	542	532	523	514	504	495
29.4	485	476	467	457	448	439	429	420	410	401
29.5	392	382	373	364	354	345	336	326	318	308
29.6	298	289	280	270	261	252	242	233	224	215
29.7	205	196	187	177	168	159	149	140	131	122
29.8	112	103	94	85	75	66	57	47	38	29
29.9	20	10	+1	-8	-17	-26	-36	-45	-54	-63
30.0	-73	-82	-91	-100	-110	-119	-128	-137	-146	-156
30.1	-165	174	183	192	202	211	220	229	238	248
30.2	-257	266	275	284	293	303	312	321	330	339
30.3	-348	358	367	376	385	394	403	412	421	431
30.4	-440	449	458	467	476	485	494	504	513	522
30.5	-531	540	549	558	567	576	585	594	604	613
30.6	-622	631	640	649	658	667	676	685	694	703
30.7	-712	721	730	740	749	758	767	776	785	794
30.8	-803	812	821	830	839	848	857	866	875	884
30.9	-893	902	911	920	929	938	947	956	965	974
31.0	-983	992	1001	1010	1019	1028	1037	1046	1055	1064

NOTE. Table V. Altitude-pressure table—feet-inches, was taken from TM 1-205.

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Table VI. CONVERSION OF MILLIBARS AND INCHES OF MERCURY

Millibars	Inches of mercury	Millibars	Inches of mercury	Inches of mercury	Millibars	Inches of mercury	Millibars
1	0.029	100	2.953	0.001	0.0339	0.1	3.3864
2	0.059	200	5.906	0.002	0.0677	0.2	6.7729
3	0.089	300	8.859	0.003	0.1016	0.3	10.1593
4	0.118	400	11.812	0.004	0.1355	0.4	13.5458
5	0.148	500	14.765	0.005	0.1693	0.5	16.9322
6	0.177	600	17.718	0.006	0.2032	0.6	20.3186
7	0.207	700	20.671	0.007	0.2371	0.7	23.7051
8	0.236	800	23.624	0.008	0.2709	0.8	27.0915
9	0.266	900	26.577	0.009	0.3048	0.9	30.4780
10	0.295	1000	29.530	0.01	0.3386	1.0	33.8644
20	0.591	-----	-----	0.02	0.6773	2.0	67.7288
30	0.886	-----	-----	0.03	1.0159	3.0	101.5932
40	1.118	-----	-----	0.04	1.3546	4.0	135.4576
50	1.476	-----	-----	0.05	1.6932	5.0	169.3220
60	1.772	-----	-----	0.06	2.0319	6.0	203.1864
70	2.067	-----	-----	0.07	2.3705	7.0	237.0508
80	2.362	-----	-----	0.08	2.7092	8.0	270.9152
90	2.658	-----	-----	0.09	3.0478	9.0	304.7796
-----	-----	-----	-----	-----	-----	10.0	338.6440
-----	-----	-----	-----	-----	-----	20.0	677.2880
-----	-----	-----	-----	-----	-----	30.0	1015.9320

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Table VII. TABLE OF CONSTANTS AND EQUIVALENTS

1. Linear equivalents.

1 centimeter (cm)	=10.0 millimeters (mm) =0.39370 inches (in)
1 meter (m)	=1,000 millimeters (mm) =100 centimeters (cm) =39.37000 inches (in) =3.28083 feet (ft) =1.09361 yards (yd)
1 kilometer (km)	=1,000 meters (m) =0.53959 nautical mile =0.62137 statute mile (mi stat) =1,093.61 yards (yd) =3,280.83 feet (ft)
1 inch (in)	=2.54001 centimeters (cm) =25.4001 millimeters (mm)
1 foot (ft)	=12 inches (in) =0.3048 meter (m) =30.4801 centimeters (cm)
1 yard (yd)	=3.0 feet (ft) =36.0 inches (in) =0.000568 mile (mi) =0.000493 nautical mile =0.91440 meter
1 statute mile	=5,280 feet (ft) =1,760 yards (yd) =0.8683 nautical mile =1.60935 kilometers (km) =1,609.34722 meters (m)
1 nautical mile	=6,080.20 feet (ft) =2,027.0 yards (yd) =1.15155 statute miles (mi stat) =1.85325 kilometers (km) =1 minute of latitude along any meridian =76 statute miles=122 kilometers (approx.)
66 nautical miles	

2. Volumetric equivalents.

1 liter	=1,000 cubic centimeters (cc) =0.03531 cubic foot (ft ³) =61.0250 cubic inches (in ³) =0.26418 U. S. gallon (gal) =1.05671 U. S. liquid quarts (qt) =33.8147 U. S. fluid ounces (oz) =0.21998 imperial gallon =0.87989 imperial quart =35.1956 imperial fluid ounces
1 U. S. gallon	=0.13368 cubic foot (ft ³) =4 quarts=8 pints =231.0 cubic inches (in ³) =3.78533 liters =0.8330 imperial gallon =2 pints (pt)=32 fluid ounces (oz)

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1 U. S. liquid quart	=57.75 cubic inches (in ³) =0.94633 liter =0.83267 imperial quart =29.573 milliliters or cc
1 U. S. fluid ounce (oz)	=1.0408 imperial fluid ounces =0.16052 cubic foot (ft ³)
1 imperial gallon	=277.42 cubic inches (in ³) =4.54596 liters =1.20095 U. S. gallons =40.0 imperial fluid ounces
1 imperial quart	=1.13649 liters =1.20095 U. S. liquid quarts
1 imperial fluid ounce	=28.412 milliliters or cc =0.9608 U. S. fluid ounce
1 cubic foot (ft ³)	=7.480519 U. S. gallons =6.22901 imperial gallons =28.31624 liters

3. Speed equivalents.

1 mile per hour	=1.4666 feet per second = $\frac{88}{60}$ feet per second. =0.8683 knot =1.60934 kilometers per hour
1 knot	=1.6889 feet per second =1 nautical mile per hour =1.15155 miles per hour =1.85325 kilometers per hour
1 kilometer per hour	=0.62137 miles per hour =0.53959 knots

4. Time equivalents.

1 hour	=60 minutes=3,600 seconds
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From Greenwich Civil Time—

To obtain Eastern Standard Time subtract 5 hours.

To obtain Central Standard Time subtract 6 hours.

To obtain Mountain Standard Time subtract 7 hours.

To obtain Pacific Standard Time subtract 8 hours.

5. Weight, or force Equivalents.

1 kilogram (kg)	=1,000 grams (g) =2.20462 pounds (lb)
1 gram	=0.03527 ounce avoirdupois (oz)
1 pound (lb) avoirdupois	=0.45359 kilogram (kg)
1 ounce avoirdupois (oz)	=28.34953 grams

g, the acceleration of a freely falling body in vacuum, the "gravitations constant"

$$=980.665 \text{ centimeters per second}^2 = 32.1740 \text{ feet per second}^2$$

6. Energy equivalents.

1 foot pound	=3.766 x 10 ⁴ watt hours
1 kilowatt hour	=2.655 x 10 ⁶ foot pounds

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7. Power equivalents.

1 horsepower (HP)	=33,000 foot pounds per minute =550 foot pounds per second =745.7 watts
1 kilowatt	=1.341 horsepower
1 watt	=1 ampere volt

8. Pressure equivalents.

1 inch of mercury (at 0°C)	=0.03342 atmosphere =2.5400 centimeters of mercury =0.4912 pound per (in ²) =34.539 per (cm ²) =33.864 millibars (mb)
1 pound per square inch	=2.036 inches of mercury =0.06804 atmospheres =68.92 millibars (mb) =70.32 grams per (cm ²) =1013.3 millibars (mb) =14.69 pounds per (in ²) =1033 grams per (cm ²) =760 millimeters of mercury =29.92 inches of mercury
1 atmosphere	=1.020 grams per (cm ²) =0.02953 inch of mercury =0.0145 pound (in) ² =0.03937 inch of mercury =1.333 millibars =1.36 gram per (cm) ² =0.01934 pound per (in ²)
1 millibar (mb)	
1 millimeter of mercury (at 0°C)	

9. Temperature scales.

Distilled water, at 1 atmosphere pressure, freezes at
 $0^{\circ}\text{C}=32^{\circ}\text{F}=273^{\circ}\text{K}$

Distilled water, at 1 atmosphere pressure, boils at
 $100^{\circ}\text{C}=212^{\circ}\text{F}=373^{\circ}\text{K}$

To change Fahrenheit (°F) to centigrade (°C)

$$^{\circ}\text{C}=\frac{5}{9} (^{\circ}\text{F}-32)$$

To change centigrade (°C) to Fahrenheit (°F)

$$^{\circ}\text{F}=\left(\frac{9}{5}^{\circ}\text{C}\right)+32$$

To change centigrade (°C) to Kelvin (°K)

$$^{\circ}\text{K}=^{\circ}\text{C}+273$$

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10. Densities (weight per volume and specific gravities).

	lb./ft. ³	lb./gal.	g/cm ³	Specific gravity*
Water.....	62.4	8.34	1	1
Gasoline (aviation).....	45	6	0.72	0.72
Air.....	.0765	-----	0.001225	1
Oil (aviation).....	56	7.5	0.90	0.90
Hydrogen.....	{ 0.00533	}-----	0.000854	0.0696
Helium.....	{ 0.00562 OC			
Helium.....	.01046	-----	.0001675	.1368
Oxygen.....	{ .0895	}-----	.00136	1.11
Oxygen.....	{ .0848			
Aluminum.....	160-168	-----	2.56-2.69	2.56
Iron.....	440-495	-----	7.05-7.92	7.0

*Gases are compared with dry air under standard (NACA) conditions: Pressure=29.92 inches of mercury, and temperature=15 °C=59° F.

11. Law of gases.—For a given weight of gas, the relations between volume, pressure, and temperature of a gas may be expressed mathematically as

$$PV=RT$$

where P=pressure

V=volume

R=a constant depending upon units chosen

T=temperature in degrees Kelvin (273+°C)

Or according to Boyle's Law—the volume of gas is inversely proportional to the pressure if the temperature and quantity of the gas is held constant.

Or according to Charles' Law—With pressure and quantity of a gas held constant a gas will expand and contract proportionately with temperature (in degrees Kelvin).

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Table VIII. LENGTH OF A DEGREE IN LATITUDE AND LONGITUDE

Lat.	Degree of Long.			Degree of Lat.			Lat.
	Naut. miles.	Statute miles.	Meters.	Naut. miles.	Statute miles.	Meters.	
°							°
0	60.068	69.172	111 321	59.661	68.704	110 567	0
1	0.059	9.162	1 304	.661	.704	568	1
2	0.031	9.130	1 253	.662	.705	569	2
3	59.986	9.078	1 169	.663	.706	570	3
4	9.922	9.005	1 051	.664	.708	573	4
5	59.840	68.911	110 900	59.666	68.710	110 576	5
6	9.741	8.795	0 715	.668	.712	580	6
7	9.622	8.660	0 497	.670	.715	584	7
8	9.487	8.504	0 245	.673	.718	589	8
9	9.333	8.326	109 959	.676	.721	595	9
10	59.161	68.129	109 641	59.680	68.725	110 601	10
11	8.971	7.910	9 289	.684	.730	608	11
12	8.764	7.670	8 904	.687	.734	616	12
13	8.538	7.410	8 486	.692	.739	624	13
14	8.295	7.131	8 036	.697	.744	633	14
15	58.034	66.830	107 553	59.702	68.751	110 643	15
16	7.756	6.510	7 036	.707	.757	653	16
17	7.459	6.169	6 487	.713	.764	663	17
18	7.146	5.808	5 906	.719	.771	675	18
19	6.816	5.427	5 294	.725	.778	686	19
20	56.468	65.026	104 649	59.732	68.786	110 699	20
21	6.102	4.606	3 972	.739	.794	712	21
22	5.720	4.166	3 264	.746	.802	725	22
23	5.321	3.706	2 524	.754	.811	739	23
24	4.905	3.228	1 754	.761	.820	753	24
25	54.473	62.729	100 952	59.769	68.829	110 768	25
26	4.024	2.212	0 119	.777	.839	783	26
27	3.558	1.676	99 257	.786	.848	799	27
28	3.076	1.122	8 364	.795	.858	815	28
29	2.578	0.548	7 441	.804	.869	832	29
30	52.064	59.956	96 488	59.813	68.879	110 849	30
31	1.534	9.345	5 506	.822	.890	866	31
32	0.989	8.716	4 495	.831	.901	883	32
33	0.428	8.071	3 455	.841	.912	901	33
34	49.851	7.407	2 387	.851	.923	919	34
35	49.259	56.725	91 290	59.861	68.935	110 938	35
36	8.653	6.027	0 166	.871	.946	956	36
37	8.031	5.311	89 014	.881	.958	975	37
38	7.395	4.579	7 835	.891	.969	994	38
39	6.744	3.829	6 629	.902	.981	111 013	39
40	46.079	53.063	85 396	59.912	68.993	111 033	40
41	5.399	2.281	4 137	.923	69.006	052	41
42	4.706	1.483	2 853	.933	.018	072	42
43	4.000	0.669	1 543	.944	.030	091	43
44	3.280	49.840	0 208	.954	.042	111	44
45	2.546	8.995	78 849	.965	.054	131	45

NOTE.—Table VIII, Length of a Degree in Latitude and Longitude, was taken from Hydrographic Office Publication No. 9, Part II.

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Table VIII. Length of a Degree in Latitude and Longitude—Continued

Lat.	Degree of Long.			Degree of Lat.			Lat.
	Naut. miles.	Statute miles.	Meters.	Naut. miles.	Statute miles.	Meters.	
°							°
45	42.546	48.995	78 849	59.965	69.054	111 131	45
46	1.801	8.136	7 466	.976	.066	151	46
47	1.041	7.261	6 058	.987	.079	170	47
48	0.268	6.372	4 628	.997	.091	190	48
49	39.484	5.469	3 174	60.008	.103	210	49
50	38.688	44.552	71 698	60.019	69.115	111 229	50
51	7.880	3.621	0 200	.029	.127	249	51
52	7.060	2.676	68 680	.039	.139	268	52
53	6.229	1.719	7 140	.050	.151	287	53
54	5.388	0.749	5 578	.060	.163	306	54
55	34.532	39.766	63 996	60.070	69.175	111 325	55
56	3.668	8.771	2 395	.080	.186	343	56
57	2.794	7.764	0 774	.090	.197	362	57
58	1.909	6.745	59 135	.100	.209	380	58
59	1.015	5.716	7 478	.109	.220	397	59
60	30.110	34.674	55 802	60.118	69.230	111 415	60
61	29.197	3.623	4 110	.128	.241	432	61
62	8.275	2.660	2 400	.137	.251	448	62
63	7.344	1.488	0 675	.145	.261	464	63
64	6.404	0.406	48 934	.154	.271	480	64
65	25.456	29.315	47 177	60.162	69.281	111 496	65
66	4.501	8.215	5 407	.170	.290	511	66
67	3.538	7.106	3 622	.178	.299	525	67
68	2.567	5.988	1 823	.186	.308	539	68
69	1.590	4.862	0 012	.193	.316	553	69
70	20.606	23.729	38 188	60.200	69.324	111 566	70
71	19.616	2.589	6 353	.207	.332	578	71
72	8.619	1.441	4 506	.213	.340	590	72
73	7.617	0.287	2 648	.220	.347	602	73
74	6.609	19.127	0 781	.225	.354	613	74
75	15.596	17.960	28 903	60.231	69.360	111 623	75
76	4.578	6.788	7 017	.236	.366	633	76
77	3.556	5.611	5 123	.241	.372	642	77
78	2.529	4.428	3 220	.246	.377	650	78
79	1.499	3.242	1 311	.250	.382	658	79
80	10.465	12.051	19 394	60.254	69.386	111 665	80
81	9.428	10.857	7 472	.257	.390	671	81
82	8.388	9.659	5 545	.260	.394	677	82
83	7.345	8.458	3 612	.263	.397	682	83
84	6.300	7.255	1 675	.265	.400	687	84
85	5.253	6.049	9 735	60.268	69.402	111 691	85
86	4.205	4.842	7 792	.269	.404	694	86
87	3.154	3.632	5 846	.270	.405	696	87
88	2.103	2.422	3 898	.271	.407	698	88
89	1.052	1.211	1 949	.272	.407	699	89
90	0	0	0	.272	.407	699	90

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Table IX. CONVERSION TABLES FOR THERMOMETER SCALES

Equivalent temperatures—Fahr., Cent., Réau					
$R^{\circ} = \frac{5}{9} C^{\circ} = \frac{1}{9} (F^{\circ} - 32^{\circ})$ $C^{\circ} = \frac{9}{5} R^{\circ} = \frac{5}{9} (F^{\circ} - 32^{\circ})$					
F ^o .	C ^o .	R ^o .	F ^o .	C ^o .	R ^o .
1	-17.2	-13.8	51	+10.6	+ 8.4
2	16.7	13.3	52	11.1	8.9
3	16.1	12.9	53	11.7	9.3
4	15.6	12.4	54	12.2	9.8
5	15.0	12.0	55	12.8	10.2
6	14.4	11.6	56	13.3	10.7
7	13.9	11.1	57	13.9	11.1
8	13.3	10.7	58	14.4	11.6
9	12.8	10.2	59	15.0	12.0
10	12.2	9.8	60	15.6	12.4
11	11.7	9.3	61	16.1	12.9
12	11.1	8.9	62	16.7	13.3
13	10.6	8.4	63	17.2	13.8
14	10.0	8.0	64	17.8	14.2
15	9.4	7.6	65	18.3	14.7
16	8.9	7.1	66	18.9	15.1
17	8.3	6.7	67	19.4	15.6
18	7.8	6.2	68	20.0	16.0
19	7.2	5.8	69	20.6	16.4
20	6.7	5.3	70	21.1	16.9
21	6.1	4.9	71	21.7	17.3
22	5.6	4.4	72	22.2	17.8
23	5.0	4.0	73	22.8	18.2
24	4.4	3.6	74	23.3	18.7
25	3.9	3.1	75	23.9	19.1
26	3.3	2.7	76	24.4	19.6
27	2.8	2.2	77	25.0	20.0
28	2.2	1.8	78	25.6	20.4
29	1.7	1.3	79	26.1	20.9
30	1.1	0.9	80	26.7	21.3
31	- 0.6	- 0.4	81	27.2	21.8
32	0.0	0.0	82	27.8	22.2
33	+ 0.6	+ 0.4	83	28.3	22.7
34	1.1	0.9	84	28.9	23.1
35	1.7	1.3	85	29.4	23.6
36	2.2	1.8	86	30.0	24.0
37	2.8	2.2	87	30.6	24.4
38	3.3	2.7	88	31.1	24.9
39	3.9	3.1	89	31.7	25.3
40	4.4	3.6	90	32.2	25.8
41	5.0	4.0	91	32.8	26.2
42	5.6	4.4	92	33.3	26.7
43	6.1	4.9	93	33.9	27.1
44	6.7	5.3	94	34.4	27.6
45	7.2	5.8	95	35.0	28.0
46	7.8	6.2	96	35.6	28.4
47	8.3	6.7	97	36.1	28.9
48	8.9	7.1	98	36.7	29.3
49	9.4	7.6	99	37.2	29.8
50	+10.0	+ 8.0	100	+37.8	+30.2

Equivalent temperatures—Centigrade and Fahrenheit									
$F^{\circ} = \frac{9}{5} C^{\circ} + 32^{\circ}$									
C ^o .	F ^o .	C ^o .	F ^o .	C ^o .	F ^o .	C ^o .	F ^o .	C ^o .	F ^o .
-10	14.0	0	32.0	10	50.0	20	68.0	30	86.0
- 9	15.8	1	33.8	11	51.8	21	69.8	31	87.8
- 8	17.6	2	35.6	12	53.6	22	71.6	32	89.6
- 7	19.4	3	37.4	13	55.4	23	73.4	33	91.4
- 6	21.2	4	39.2	14	57.2	24	75.2	34	93.2
- 5	23.0	5	41.0	15	59.0	25	77.0	35	95.0
- 4	24.8	6	42.8	16	60.8	26	78.8	36	96.8
- 3	26.6	7	44.6	17	62.6	27	80.6	37	98.6
- 2	28.4	8	46.4	18	64.4	28	82.4	38	100.4
- 1	30.2	9	48.2	19	66.2	29	84.2	39	102.2

Equivalent temperatures—Réaumur and Fahrenheit							
$F^{\circ} = \frac{9}{4} R^{\circ} + 32^{\circ}$							
R ^o .	F ^o .	R ^o .	F ^o .	R ^o .	F ^o .	R ^o .	F ^o .
-10	9.5	0	32.0	10	54.5	20	77.0
- 9	11.8	1	34.2	11	56.8	21	79.2
- 8	14.0	2	36.5	12	59.0	22	81.5
- 7	16.2	3	38.8	13	61.2	23	83.8
- 6	18.5	4	41.0	14	63.5	24	86.0
- 5	20.8	5	43.2	15	65.8	25	88.2
- 4	23.0	6	45.5	16	68.0	26	90.5
- 3	25.2	7	47.8	17	70.2	27	92.8
- 2	27.5	8	50.0	18	72.5	28	95.0
- 1	29.8	9	52.2	19	74.8	29	97.2

NOTE.—Table IX, Conversion Tables for Thermometer Scales, was taken from Hydrographic Office Publication No. 9, Part II.

Table X. LOGARITHMS OF TRIGONOMETRIC FUNCTIONS ³

Table of logarithms of trigonometric functions. This table gives the logarithms of the sines, cosines, tangents, cotangents, secants, and cosecants of angles at intervals of 1' from 0° to 90°. The names of the functions written at the top of any page apply to angles having the number of degrees written at the top of the page, and the function names written at the bottom apply to angles having the number of degrees written at the bottom. The left-hand or the right-hand minute column applies according as the number of degrees in the angle is written on the left side or on the right side of the block of numbers under consideration. One of the arrowheads attached to each number representing degrees points toward the column of minutes to be used in connection with an angle involving that number of degrees, the other points toward the row of names to be considered.

For example, to find $\log \sin 32^\circ 46'$, we find the page at the top of which 32° appears, find the row containing 46 in the left-hand minute column, and read 9.73337 in this row and in the column headed sin. The part 9.73 was found above the 46' entry or it could have been found lower down in the column, and 10 is to be subtracted from every logarithm in the table. Again, to find $\log \tan 142^\circ 36'$, find the page at the top of which 142° appears, find the row containing 36 in the right-hand minute column, and read 9.88341 in this row and in the column headed tan. Hence $\log \tan 142^\circ 36' = (-) 9.88341 - 10$. The minus sign in parentheses before the log indicates that a negative number is under consideration. The 9.88 was found three spaces higher in the column, or it could have been found lower in the column.

Given the angle to find the logarithm of a trigonometric function—Interpolation. The principles involved here are the same as those involved in finding logarithms and antilogarithms of numbers. Interpolation for seconds is accomplished by direct interpolation or by using the columns headed "Diff." The following example will illustrate the use of the difference columns.

Example. Find $\log \tan 65^\circ 42' 17''$.

Solution. On the page at the foot of which 65° appears, read opposite the 42' of the right-hand minute column 533; attach to this the 10.34 found four spaces above this entry, to obtain 10.34533. In the nearest difference column opposite 17'' find 9 and add it to the last figures (33) of 10.34533 and finally subtract 10 from the result to obtain

$$\log \tan 65^\circ 42' 17'' = 10.34542 - 10 = 0.34542$$

In the process of interpolation for seconds, the difference column, headed "Diff," nearest to the column of entries involved should be used. The change for seconds is found in this column opposite a number in the adjacent column equal to the number of seconds in the given angle. This difference is added to or subtracted from the number represented by the last three digits of the entry opposite the given number of minutes according as the entry for the next higher number of minutes is a greater or a lesser one.

Interpolation by means of the columns headed "Diff" involve slight errors which are negligible for most purposes of navigation. To avoid this error, direct interpolation may be used. Let n represent the number of seconds, D the difference between the entry corresponding to the given number of minutes and that corresponding to the next higher number of minutes, and d the required change to be added to or subtracted from the entry opposite the given number of minutes. Then

$$d = \frac{n}{60} D.$$

³ The following table of logarithms of trigonometric functions and explanation thereto have been prepared and copyrighted by Lyman M. Kells, Willis F. Kern, and James R. Bland, who have supplied them to the Army Air Forces for use in this publication. Neither the table nor any new feature embodied therein may be reproduced in any form without permission of the copyright owners.

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Given the logarithm of a trigonometric function, to find the angle. The following example will indicate the procedure necessary to find the angle when the logarithm of a trigonometric function of the angle is given.

Example. Find θ if $\log \cos \theta = 9.85391 - 10$.

Solution. On the page at the top of which 44° appears, and in the column headed **cos** find the two entries 9.85399 and 9.85386 between which the given logarithm lies. Write $\theta = 44^\circ 24' +$ associated with the entry 9.85399. The difference between 9.85399 and the given logarithm is 0.00008; hence enter the adjacent column headed "Diff" and opposite the 8 in **boldface** read 39" in the associated seconds column. Hence

$$\theta = 44^\circ 24' 39''$$

In obtaining approximate position, observe only the two digits in **boldface** at the top of the page while leafing through the table in search of the desired page.

RULE: *Whenever, in the process of finding the appropriate number of seconds, there is a choice between two or more entries one of which is printed in boldface always give preference to the boldface entry.*

Here again direct interpolation may be used. For this purpose solve the formula written above, $d = (n/60)D$ for n to obtain

$$n = \frac{d}{D} 60,$$

where n and D have the same meanings as above and d is the difference between the logarithm corresponding to the correct number of minutes and the given logarithm.

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Table X. Logarithms of Trigonometric Functions

$0^\circ \rightarrow$ ↓	sin	Diff. 1'	tsc	tan	Diff. 1'	cot	sec	cos ← 179° ↓
0	Inf. neg.		Infinite.	Inf. neg.		Infinite.	10. 00000	10. 00000
1	6. 46373	30103	13. 53627	6. 46373	30103	13. 53627	000	000
2	76476	17609	23524	76476	17609	23524	000	000
3	6. 94085	12494	13. 05915	6. 94085	12494	13. 05915	000	000
4	7. 06579	9691	12. 93421	7. 06579	9691	12. 93421	000	000
5	16270	7918	83730	16270	7918	83730	000	000
6	24188	6694	75812	24188	6694	75812	000	000
7	30882	5800	69118	30882	5800	69118	000	000
8	36682	5115	63318	36682	5115	63318	000	000
9	41797	4576	58203	41797	4576	58203	000	000
10	7. 46373	4139	12. 53627	7. 46373	4139	12. 53627	10. 00000	10. 00000
11	50512	3779	49488	50512	3779	49488	000	000
12	54291	3476	45709	54291	3476	45709	000	000
13	57767	3218	42233	57767	3219	42233	000	000
14	60985	2997	39015	60986	2996	39014	000	000
15	7. 63982	2802	12. 36018	7. 63982	2803	12. 36018	000	000
16	66784	2633	33216	66785	2633	33215	000	10. 00000
17	69417	2483	30583	69418	2482	30582	001	9. 99999
18	71900	2348	28100	71900	2348	28100	001	999
19	74248	2227	25752	74248	2228	25752	001	999
20	7. 76475	2119	12. 23525	7. 76476	2119	12. 23524	10. 00001	9. 99999
21	78594	2021	21406	78595	2020	21405	001	999
22	80615	1930	19385	80615	1931	19385	001	999
23	82545	1848	17455	82546	1848	17454	001	999
24	84393	1773	15607	84394	1773	15606	001	999
25	7. 86166	1704	12. 13834	7. 86167	1704	12. 13833	001	999
26	87870	1639	12130	87871	1639	12129	001	999
27	7. 89509	1579	10491	89510	1579	10490	001	999
28	91088	1524	08912	91089	1524	08911	001	999
29	92612	1472	07388	92613	1473	07387	002	998
30	7. 94084	1424	12. 05916	7. 94086	1424	12. 05914	10. 00002	9. 99998
31	95508	1379	04492	95510	1379	04490	002	998
32	96887	1336	03113	96889	1336	03111	002	998
33	98223	1297	01777	98225	1297	01775	002	998
34	7. 99520	1259	12. 00480	7. 99522	1259	12. 00478	002	998
35	8. 00779	1223	11. 99221	8. 00781	1223	11. 99219	002	998
36	02002	1190	97998	02004	1190	97996	002	998
37	03192	1158	96808	03194	1159	96806	003	997
38	04350	1128	95650	04353	1128	95647	003	997
39	05478	1100	94522	05481	1100	94519	003	997
40	8. 06578	1072	11. 93422	8. 06581	1072	11. 93419	10. 00003	9. 99997
41	07650	1046	92350	07653	1047	92347	003	997
42	08696	1022	91304	08700	1022	91300	003	997
43	09718	999	90282	09722	998	90278	003	997
44	10717	976	89283	10720	976	89280	004	996
45	8. 11693	954	11. 88307	8. 11696	955	11. 88304	004	996
46	12647	934	87353	12651	934	87349	004	996
47	13581	914	86419	13585	915	86415	004	996
48	14495	896	85505	14500	895	85500	004	996
49	15391	877	84609	15395	878	84605	004	996
50	8. 16268	860	11. 83732	8. 16273	860	11. 83727	10. 00005	9. 99995
51	17128	843	82872	17133	843	82867	005	995
52	17971	827	82029	17976	828	82024	005	995
53	18798	812	81202	18804	812	81196	005	995
54	19610	797	80390	19616	797	80384	005	995
55	8. 20407	782	11. 79593	8. 20413	782	11. 79587	006	994
56	21189	769	78811	21195	769	78805	006	994
57	21958	755	78042	21964	756	78036	006	994
58	22713	743	77287	22720	742	77280	006	994
59	23456	730	76544	23462	730	76538	006	994
60	8. 24186	717	11. 75814	8. 24192	718	11. 75808	10. 00007	9. 99993
↑ $90^\circ \rightarrow$	cos	Diff. 1'	sec	cot	Diff. 1'	tan	csc	sin ← 89° ↑

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Table X. Logarithms of Trigonometric Functions—Continued

$1^\circ \rightarrow$ \downarrow	sin	Diff. 1'.	csc	tan	Diff. 1'.	cot	sec	cos $\leftarrow 178^\circ$ \downarrow
0	8. 24186	717	11. 75814	8. 24192	718	11. 75808	10. 00007	9. 99993
1	4903	706	5097	4910	706	5090	007	993
2	5609	695	4391	5616	696	4384	007	993
3	6304	684	3696	6312	684	3688	007	993
4	6988	673	3012	6996	673	3004	008	992
5	7661	663	2339	7669	663	2331	008	992
6	8324	653	1676	8332	654	1668	008	992
7	8977	644	1023	8986	643	1014	008	992
8	8. 29621	634	11. 70379	8. 29629	634	11. 70371	008	992
9	8. 30255	624	11. 69745	8. 30263	625	11. 69737	009	991
10	0879	616	9121	0888	617	9112	10. 00009	9. 99991
11	1495	608	8505	1505	607	8495	009	991
12	2103	599	7897	2112	599	7888	010	990
13	2702	590	7298	2711	591	7289	010	990
14	3292	583	6708	3302	584	6698	010	990
15	3875	575	6125	8. 33886	575	11. 66114	010	990
16	4450	568	5550	4461	568	5539	011	989
17	8. 35018	560	11. 64982	5029	561	4971	011	989
18	5578	553	4422	5590	553	4410	011	989
19	6131	547	3869	6143	546	3857	011	989
20	6678	539	3322	8. 36689	540	11. 63311	10. 00012	9. 99988
21	7217	533	2783	7229	533	2771	012	988
22	7750	526	2250	7762	527	2238	012	988
23	8276	520	1724	8289	520	1711	013	987
24	8796	514	1204	8809	514	1191	013	987
25	9310	508	0690	9323	509	0677	013	987
26	8. 39818	502	11. 60182	8. 39832	502	11. 60168	014	986
27	8. 40320	496	11. 59680	8. 40334	496	11. 59666	014	986
28	0816	491	9184	0830	491	9170	014	986
29	1307	485	8693	1321	486	8679	015	985
30	1792	480	8208	1807	480	8193	10. 00015	9. 99985
31	2272	474	7728	2287	475	7713	015	985
32	2746	470	7254	2762	470	7238	016	984
33	3216	464	6784	3232	464	6768	016	984
34	8. 43680	459	11. 56320	8. 43696	460	11. 56304	016	984
35	4139	455	5861	4156	455	5844	017	983
36	4594	450	5406	4611	450	5389	017	983
37	5044	445	4956	5061	446	4939	017	983
38	5489	441	4511	5507	441	4493	018	982
39	5930	436	4070	5948	437	4052	018	982
40	6366	433	3634	6385	432	3615	10. 00018	9. 99982
41	8. 46799	427	11. 53201	6817	428	3183	019	981
42	7226	424	2774	8. 47245	424	11. 52755	019	981
43	7650	419	2350	7669	420	2331	019	981
44	8069	416	1931	8089	416	1911	020	980
45	8485	411	1515	8505	412	1495	020	980
46	8896	408	1104	8917	408	1083	021	979
47	9304	404	0696	9325	404	0675	021	979
48	8. 49708	400	11. 50292	8. 49729	401	11. 50271	021	979
49	8. 50108	396	11. 49892	8. 50130	397	11. 49870	022	978
50	0504	393	9496	0527	393	9473	10. 00022	9. 99978
51	0897	390	9103	0920	390	9080	023	977
52	1287	386	8713	1310	386	8690	023	977
53	1673	382	8327	1696	383	8304	023	977
54	2055	379	7945	2079	380	7921	024	976
55	8. 52434	376	11. 47566	8. 52459	376	11. 47541	024	976
56	2810	373	7190	2835	373	7165	025	975
57	3183	369	6817	3208	370	6792	025	975
58	3552	367	6448	3578	367	6422	026	974
59	3919	363	6081	3945	363	6055	026	974
60	8. 54282	360	11. 45718	8. 54308	361	11. 45692	10. 00026	9. 99974
$\uparrow 91^\circ \rightarrow$	cos	Diff. 1'.	sec	cot	Diff. 1'.	tan	csc	sin $\leftarrow 88^\circ$ \uparrow

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Table X. Logarithms of Trigonometric Functions—Continued

$2^\circ \rightarrow$ ↓	sin	Diff.1'	csc	tan	Diff.1'	cot	sec	cos ← 177° ↓
0	8. 54282	360	11. 45718	8. 54308	361	11. 45692	10. 00026	9. 99974
1	4642	357	5358	4669	358	5331	027	973
2	4999	355	5001	5027	355	4973	027	973
3	5354	351	4646	5382	352	4618	028	972
4	5705	349	4295	5734	349	4266	028	972
5	6054	346	3946	6083	346	3917	029	971
6	6400	343	3600	6429	344	3571	029	971
7	6743	341	3257	6773	341	3227	030	970
8	8. 57084	337	11. 42916	8. 57114	338	11. 42886	030	970
9	7421	336	2579	7452	336	2548	031	969
10	7757	332	2243	7788	333	2212	10. 00031	9. 99969
11	8089	330	1911	8121	330	1879	032	968
12	8419	328	1581	8451	328	1549	032	968
13	8747	325	1253	8779	326	1221	033	967
14	9072	323	0928	9105	323	0895	033	967
15	9395	320	0605	9428	321	0572	033	967
16	8. 59715	318	11. 40285	8. 59749	319	11. 40251	034	966
17	8. 60033	316	11. 39967	8. 60068	316	11. 39932	034	966
18	0349	313	9651	0384	314	9616	035	965
19	0662	311	9338	0698	311	9302	036	964
20	0973	309	9027	1009	310	8991	10. 00036	9. 99964
21	1282	307	8718	1319	307	8681	037	963
22	1589	305	8411	1626	305	8374	037	963
23	1894	302	8106	1931	303	8069	038	962
24	2196	301	7804	2234	301	7766	038	962
25	2497	298	7503	2535	299	7465	039	961
26	8. 62795	296	11. 37205	8. 62834	297	11. 37166	039	961
27	3091	294	6909	3131	295	6869	040	960
28	3385	293	6615	3426	292	6574	040	960
29	3678	290	6322	3718	291	6282	041	959
30	3968	288	6032	4009	289	5991	10. 00041	9. 99959
31	4256	287	5744	4298	287	5702	042	958
32	4543	284	5457	4585	285	5415	042	958
33	4827	283	5173	4870	284	5130	043	957
34	5110	281	4890	5154	281	4846	044	956
35	8. 65391	279	11. 34609	8. 65435	280	11. 34565	044	956
36	5670	277	4330	5715	278	4285	045	955
37	5947	276	4053	5993	276	4007	045	955
38	6223	274	3777	6269	274	3731	046	954
39	6497	272	3503	6543	273	3457	046	954
40	6769	270	3231	6816	271	3184	10. 00047	9. 99953
41	7039	269	2961	7087	269	2913	048	952
42	7308	267	2692	7356	268	2644	048	952
43	7575	266	2425	7624	266	2376	049	951
44	7841	263	2159	7890	264	2110	049	951
45	8. 68104	263	11. 31896	8. 68154	263	11. 31846	050	950
46	8367	260	1633	8417	261	1583	051	949
47	8627	259	1373	8678	260	1322	051	949
48	8886	258	1114	8938	258	1062	052	948
49	9144	256	0856	9196	257	0804	052	948
50	9400	254	0600	9453	255	0547	10. 00053	9. 99947
51	9654	253	0346	9708	254	0292	054	946
52	8. 69907	252	11. 30093	8. 69962	252	11. 30038	054	946
53	8. 70159	250	11. 29841	8. 70214	251	11. 29786	055	945
54	0409	249	9591	0465	249	9535	056	944
55	0658	247	9342	0714	248	9286	056	944
56	0905	246	9095	0962	246	9038	057	943
57	1151	244	8849	1208	245	8792	058	942
58	1395	243	8605	1453	244	8547	058	942
59	1638	242	8362	1697	243	8303	059	941
60	8. 71880	240	11. 28120	8. 71940	241	11. 28060	10. 00060	9. 99940
↑ $92^\circ \rightarrow$	cos	Diff.1'	sec	cot	Diff.1'	tan	csc	sin ← 87° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

$3^{\circ} \rightarrow$ ↓	sin	Diff. 1'.	csc	tan	Diff. 1'.	cot	sec	cos $\leftarrow 176^{\circ}$ ↓
0	8.71880	240	11.28120	8.71940	241	11.28060	10.00060	9.99940
1	8.72120	239	11.27880	8.72181	239	11.27819	060	940
2	359	238	641	420	239	580	061	939
3	597	237	403	659	237	341	062	938
4	8.72834	235	11.27166	8.72896	236	11.27104	062	938
5	8.73069	234	11.26931	8.73132	234	11.26868	063	937
6	303	232	697	366	234	634	064	936
7	535	232	465	600	232	400	064	936
8	767	230	233	8.73832	231	11.26168	065	935
9	8.73997	229	11.26003	8.74063	229	11.25937	066	934
10	8.74226	228	11.25774	292	229	708	10.00066	9.99934
11	454	226	546	521	227	479	067	933
12	680	226	320	748	226	252	068	932
13	8.74906	224	11.25094	8.74974	225	11.25026	068	932
14	8.75130	223	11.24870	8.75199	224	11.24801	069	931
15	353	222	647	423	222	577	070	930
16	575	220	425	645	222	355	071	929
17	8.75795	220	11.24205	8.75867	220	11.24133	071	929
18	8.76015	219	11.23985	8.76087	219	11.23913	072	928
19	234	217	766	306	219	694	073	927
20	451	216	549	525	217	475	10.00074	9.99926
21	667	216	333	742	216	258	074	926
22	8.76883	214	11.23117	8.76958	215	11.23042	075	925
23	8.77097	213	11.22903	8.77173	214	11.22827	076	924
24	310	212	690	387	213	613	077	923
25	522	211	478	600	211	400	077	923
26	733	210	267	8.77811	211	11.22189	078	922
27	8.77943	209	11.22057	8.78022	210	11.21978	079	921
28	8.78152	208	11.21848	232	209	768	080	920
29	360	208	640	441	208	559	080	920
30	568	206	432	649	206	351	10.00081	9.99919
31	774	205	226	8.78855	206	11.21145	082	918
32	8.78979	204	11.21021	8.79061	205	11.20939	083	917
33	8.79183	203	11.20817	266	204	734	083	917
34	386	202	614	470	203	530	084	916
35	588	201	412	673	202	327	085	915
36	789	201	211	8.79875	201	11.20125	086	914
37	8.79990	199	11.20010	8.80076	201	11.19924	087	913
38	8.80189	199	11.19811	277	199	723	087	913
39	388	197	612	476	198	524	088	912
40	585	197	415	674	198	326	10.00089	9.99911
41	782	196	218	8.80872	196	11.19128	090	910
42	8.80978	195	11.19022	8.81068	196	11.18932	091	909
43	8.81173	194	11.18827	264	195	736	091	909
44	367	193	633	459	194	541	092	908
45	560	192	440	653	193	347	093	907
46	752	192	248	8.81846	192	11.18154	094	906
47	8.81944	190	11.18056	8.82038	192	11.17962	095	905
48	8.82134	190	11.17866	230	190	770	096	904
49	324	189	676	420	190	580	096	904
50	513	188	487	610	189	390	10.00097	9.99903
51	701	187	299	799	188	201	098	902
52	8.82888	187	11.17112	8.82987	188	11.17013	099	901
53	8.83075	186	11.16925	8.83175	186	11.16825	100	900
54	261	185	739	361	186	639	101	899
55	446	184	554	547	185	453	102	898
56	630	183	370	732	184	268	102	898
57	813	183	187	8.83916	184	11.16084	103	897
58	8.83996	181	11.16004	8.84100	182	11.15900	104	896
59	8.84177	181	11.15823	282	182	718	105	895
60	8.84358	181	11.15642	8.84464	182	11.15536	10.00106	9.99894
$\uparrow 93^{\circ} \rightarrow$	cos	Diff. 1'.	sec	cot	Diff. 1'.	tan	csc	sin $\leftarrow 86^{\circ}$ \uparrow

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Table X Logarithms of Trigonometric Functions—Continued

$4^{\circ} \rightarrow$ \downarrow	sin	Diff. 1'.	csc	tan	Diff. 1'.	cot	sec	cos $\leftarrow 175^{\circ}$ \downarrow
0	8.84358	181	11.15642	8.84464	182	11.15536	10.00106	9.99894
1	539	179	461	646	180	354	107	893
2	718	179	282	8.84826	180	11.15174	108	892
3	8.84897	178	11.15103	8.85006	179	11.14994	109	891
4	8.85075	177	11.14925	185	178	815	109	891
5	252	177	748	363	177	637	110	890
6	429	176	571	540	177	460	111	889
7	605	175	395	717	176	283	112	888
8	780	175	220	8.85893	176	11.14107	113	887
9	8.85955	173	11.14045	8.86069	174	11.13931	114	886
10	8.86128	173	11.13872	243	174	757	10.00115	9.99885
11	301	173	699	417	174	583	116	884
12	474	171	526	591	172	409	117	883
13	645	171	355	763	172	237	118	882
14	816	171	184	8.86935	171	11.13065	119	881
15	8.86987	169	11.13013	8.87106	171	11.12894	120	880
16	8.87156	169	11.12844	277	170	723	121	879
17	325	169	675	447	169	553	121	879
18	494	167	506	616	169	384	122	878
19	661	168	339	785	168	215	123	877
20	829	166	171	8.87953	167	11.12047	10.00124	9.99876
21	8.87995	166	11.12005	8.88120	167	11.11880	125	875
22	8.88161	165	11.11839	287	166	713	126	874
23	326	164	674	453	165	547	127	873
24	490	164	510	618	165	382	128	872
25	654	163	346	783	165	217	129	871
26	817	163	183	8.88948	163	11.11052	130	870
27	8.88980	162	11.11020	8.89111	163	11.10889	131	869
28	8.89142	162	11.10858	274	163	726	132	868
29	304	160	696	437	161	563	133	867
30	464	161	536	598	162	402	10.00134	9.99866
31	625	159	375	760	160	240	135	865
32	784	159	216	8.89920	160	11.10080	136	864
33	8.89943	159	11.10057	8.90080	160	11.09920	137	863
34	8.90102	158	11.09898	240	159	760	138	862
35	260	157	740	399	158	601	139	861
36	417	157	583	557	158	443	140	860
37	574	156	426	715	157	285	141	859
38	730	155	270	8.90872	157	11.09128	142	858
39	8.90885	155	11.09115	8.91029	156	11.08971	143	857
40	8.91040	155	11.08960	185	155	815	10.00144	9.99856
41	195	154	805	340	155	660	145	855
42	349	153	651	495	155	505	146	854
43	502	153	498	650	153	350	147	853
44	655	152	345	803	154	197	148	852
45	807	152	193	8.91957	153	11.08043	149	851
46	8.91959	151	11.08041	8.92110	152	11.07890	150	850
47	8.92110	151	11.07890	262	152	738	152	848
48	261	150	739	414	151	586	153	847
49	411	150	589	565	151	435	154	846
50	561	149	439	716	150	284	10.00155	9.99845
51	710	149	290	8.92866	150	11.07134	156	844
52	8.92859	148	11.07141	8.93016	149	11.06984	157	843
53	8.93007	147	11.06993	165	148	835	158	842
54	154	147	846	313	149	687	159	841
55	301	147	699	462	147	538	160	840
56	448	146	552	609	147	391	161	839
57	594	146	406	756	147	244	162	838
58	740	145	260	8.93903	146	11.06097	163	837
59	8.93885	145	11.06115	8.94049	146	11.05951	164	836
60	8.94030	144	11.05970	8.94195	145	11.05805	10.00166	9.99834
\uparrow $94^{\circ} \rightarrow$	cos	Diff. 1'.	sec	cot	Diff. 1'.	tan	csc	sin $\leftarrow 85^{\circ}$ \uparrow

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ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

5°→ ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←174° ↓
0	8.94030	0 0	11.05970	8.94195	0 0	11.05805	10.00166	0 0	9.99834 60
1	174	1 2	826	340	1 2	660	167	1 0	833 59
2	317	2 4	683	485	2 4	515	168	2 0	832 58
3	461	3 7	539	630	3 7	370	169	3 0	831 57
4	603	4 9	397	773	4 9	227	170	4 0	830 56
5	746	5 11	254	8.94917	5 11	11.05083	171	5 0	829 55
6	8.94887	6 13	11.05113	8.95060	6 13	11.04940	172	6 0	828 54
7	8.95029	7 15	11.04971	202	7 15	798	173	7 0	827 53
8	170	8 18	830	344	8 18	656	175	8 0	825 52
9	310	9 20	690	486	9 20	514	176	9 0	824 51
10	450	10 22	550	627	10 22	373	10.00177	10 0	9.99823 50
11	589	11 24	411	767	11 24	233	178	11 0	822 49
12	728	12 26	272	8.95908	12 27	11.04092	179	12 0	821 48
13	8.95867	13 29	11.04133	8.96047	13 29	11.03953	180	13 0	820 47
14	8.96005	14 31	11.03995	187	14 31	813	181	14 0	819 46
15	143	15 33	857	325	15 33	675	183	15 0	817 45
16	280	16 35	720	464	16 35	536	184	16 0	816 44
17	417	17 37	583	602	17 38	398	185	17 0	815 43
18	553	18 39	447	739	18 40	261	186	18 0	814 42
19	689	19 42	311	8.96877	19 42	11.03123	187	19 0	813 41
20	825	20 44	175	8.97013	20 44	11.02987	10.00188	20 0	9.99812 40
21	8.96960	21 46	11.03040	150	21 46	850	190	21 0	810 39
22	8.97095	22 48	11.02905	285	22 49	715	191	22 0	809 38
23	229	23 50	771	421	23 51	579	192	23 0	808 37
24	363	24 53	637	556	24 53	444	193	24 0	807 36
25	496	25 55	504	691	25 55	309	194	25 1	806 35
26	629	26 57	371	825	26 58	175	196	26 1	804 34
27	762	27 59	238	8.97959	27 60	11.02041	197	27 1	803 33
28	8.97894	28 61	11.02106	8.98092	28 62	11.01908	198	28 1	802 32
29	8.98026	29 64	11.01974	225	29 64	775	199	29 1	801 31
30	157	30 66	843	358	30 66	642	10.00200	30 1	9.99800 30
31	288	31 68	712	490	31 69	510	202	31 1	798 29
32	419	32 70	581	622	32 71	378	203	32 1	797 28
33	549	33 72	451	753	33 73	247	204	33 1	796 27
34	679	34 75	321	8.98884	34 75	11.01116	205	34 1	795 26
35	808	35 77	192	8.99015	35 77	11.00985	207	35 1	793 25
36	8.98937	36 79	11.01063	145	36 80	855	208	36 1	792 24
37	8.99066	37 81	11.00934	275	37 82	725	209	37 1	791 23
38	194	38 83	806	405	38 84	595	210	38 1	790 22
39	322	39 86	678	534	39 86	466	212	39 1	788 21
40	450	40 88	550	662	40 89	338	10.00213	40 1	9.99787 20
41	577	41 90	423	791	41 91	209	214	41 1	786 19
42	704	42 92	296	8.99919	42 93	11.00081	215	42 1	785 18
43	830	43 94	170	9.00046	43 95	10.99954	217	43 1	783 17
44	8.99956	44 96	11.00044	174	44 97	826	218	44 1	782 16
45	9.00082	45 99	10.99918	301	45 100	699	219	45 1	781 15
46	207	46 101	793	427	46 102	573	220	46 1	780 14
47	332	47 103	668	553	47 104	447	222	47 1	778 13
48	456	48 105	544	679	48 106	321	223	48 1	777 12
49	581	49 107	419	805	49 108	195	224	49 1	776 11
50	704	50 110	296	9.00930	50 111	10.99070	10.00225	50 1	9.99775 10
51	828	51 112	172	9.01055	51 113	10.98945	227	51 1	773 9
52	9.00951	52 114	10.99049	179	52 115	821	228	52 1	772 8
53	9.01074	53 116	10.98926	303	53 117	697	229	53 1	771 7
54	196	54 118	804	427	54 120	573	231	54 1	769 6
55	318	55 121	682	550	55 122	450	232	55 1	768 5
56	440	56 123	560	673	56 124	327	233	56 1	767 4
57	561	57 125	439	796	57 126	204	235	57 1	765 3
58	682	58 127	318	9.01918	58 128	10.98082	236	58 1	764 2
59	803	59 129	197	9.02040	59 131	10.97960	237	59 1	763 1
60	9.01923	60 132	10.98077	9.02162	60 133	10.97838	10.00239	60 1	9.99761 0
↑ 95°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑ 84°

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Table X. Logarithms of Trigonometric Functions—Continued

$6^{\circ} \rightarrow$ \downarrow	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos $\leftarrow 173^{\circ}$ \downarrow
0	9.01923	0 0	10.98077	9.02162	0 0	10.97838	10.00239	0 0	9.99761
1	9.02043	1 2	10.97957	283	1 2	717	240	1 0	760
2	163	2 4	837	404	2 4	596	241	2 0	759
3	283	3 6	717	525	3 6	475	243	3 0	757
4	402	4 7	598	645	4 8	355	244	4 0	756
5	520	5 9	480	766	5 9	234	245	5 0	755
6	639	6 11	361	9.02885	6 11	10.97115	247	6 0	753
7	757	7 13	243	9.03005	7 13	10.96995	248	7 0	752
8	874	8 15	126	124	8 15	876	249	8 0	751
9	9.02992	9 17	10.97008	242	9 17	758	251	9 0	749
10	9.03109	10 19	10.96891	361	10 19	639	10.00252	10 0	9.99748
11	226	11 20	774	479	11 21	521	253	11 0	747
12	342	12 22	658	597	12 23	403	255	12 0	745
13	458	13 24	542	714	13 24	286	256	13 0	744
14	574	14 26	426	832	14 26	168	258	14 0	742
15	690	15 28	310	9.03948	15 28	10.96052	259	15 0	741
16	805	16 30	195	9.04065	16 30	10.95935	260	16 0	740
17	9.03920	17 31	10.96080	181	17 32	819	262	17 0	738
18	9.04034	18 33	10.95966	297	18 34	703	263	18 0	737
19	149	19 35	851	413	19 36	587	264	19 0	736
20	262	20 37	738	528	20 38	472	10.00266	20 0	9.99734
21	376	21 39	624	643	21 39	357	267	21 1	733
22	490	22 41	510	758	22 41	242	269	22 1	731
23	603	23 43	397	873	23 43	127	270	23 1	730
24	715	24 44	285	9.04987	24 45	10.95013	272	24 1	728
25	828	25 46	172	9.05101	25 47	10.94899	273	25 1	727
26	9.04940	26 48	10.95060	214	26 49	786	274	26 1	726
27	9.05052	27 50	10.94948	328	27 51	672	276	27 1	724
28	164	28 52	836	441	28 53	559	277	28 1	723
29	275	29 54	725	553	29 54	447	279	29 1	721
30	386	30 56	614	666	30 56	334	10.00280	30 1	9.99720
31	497	31 57	503	778	31 58	222	282	31 1	718
32	607	32 59	393	9.05890	32 60	10.94110	283	32 1	717
33	717	33 61	283	9.06002	33 62	10.93998	284	33 1	716
34	827	34 63	173	113	34 64	887	286	34 1	714
35	9.05937	35 65	10.94063	224	35 66	776	287	35 1	713
36	9.06046	36 67	10.93954	335	36 68	665	289	36 1	711
37	155	37 69	845	445	37 69	555	290	37 1	710
38	264	38 70	736	556	38 71	444	292	38 1	708
39	372	39 72	628	666	39 73	334	293	39 1	707
40	481	40 74	519	775	40 75	225	10.00295	40 1	9.99705
41	589	41 76	411	885	41 77	115	296	41 1	704
42	696	42 78	304	9.06994	42 79	10.93006	298	42 1	702
43	804	43 80	196	9.07103	43 81	10.92897	299	43 1	701
44	9.06911	44 81	10.93089	211	44 83	789	301	44 1	699
45	9.07018	45 83	10.92982	320	45 84	680	302	45 1	698
46	124	46 85	876	428	46 86	572	304	46 1	696
47	231	47 87	769	536	47 88	464	305	47 1	695
48	337	48 89	663	643	48 90	357	307	48 1	693
49	442	49 91	558	751	49 92	249	308	49 1	692
50	548	50 93	452	858	50 94	142	10.00310	50 1	9.99690
51	653	51 94	347	9.07964	51 96	10.92036	311	51 1	689
52	758	52 96	242	9.08071	52 98	10.91929	313	52 1	687
53	863	53 98	137	177	53 99	823	314	53 1	686
54	9.07968	54 100	10.92032	283	54 101	717	316	54 1	684
55	9.08072	55 102	10.91928	389	55 103	611	317	55 1	683
56	176	56 104	824	495	56 105	505	319	56 1	681
57	280	57 106	720	600	57 107	400	320	57 1	680
58	383	58 107	617	705	58 109	295	322	58 1	678
59	486	59 109	514	810	59 111	190	323	59 1	677
60	9.08589	60 111	10.91411	9.08914	60 113	10.91086	10.00325	60 1	9.99675
\uparrow 96°	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin $\leftarrow 83^{\circ}$ \uparrow

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

7°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←172°
↓									↓
0	9. 08589	0 0	10. 91411	9. 08914	0 0	10. 91086	10. 00325	0 0	9. 99675
1	692	1 2	308	9. 09019	1 2	10. 90981	326	1 0	674
2	795	2 3	205	123	2 3	877	328	2 0	672
3	897	3 5	103	227	3 5	773	330	3 0	670
4	9. 08999	4 6	10. 91001	330	4 7	670	331	4 0	669
5	9. 09101	5 8	10. 90899	434	5 8	566	333	5 0	667
6	202	6 10	798	537	6 10	463	334	6 0	666
7	304	7 11	696	640	7 11	360	336	7 0	664
8	405	8 13	595	742	8 13	258	337	8 0	663
9	506	9 14	494	845	9 15	155	339	9 0	661
10	606	10 16	394	9. 09947	10 16	10. 90053	10. 00341	10 0	9. 99659
11	707	11 18	293	9. 10049	11 18	10. 89951	342	11 0	658
12	807	12 19	193	150	12 20	850	344	12 0	656
13	9. 09907	13 21	10. 90093	252	13 21	748	345	13 0	655
14	9. 10006	14 22	10. 89994	353	14 23	647	347	14 0	653
15	106	15 24	894	454	15 24	546	349	15 0	651
16	205	16 26	795	555	16 26	445	350	16 0	650
17	304	17 27	696	656	17 28	344	352	17 0	648
18	402	18 29	598	756	18 29	244	353	18 1	647
19	501	19 30	499	856	19 31	144	355	19 1	645
20	599	20 32	401	9. 10956	20 33	10. 89044	10. 00357	20 1	9. 99643
21	697	21 34	303	9. 11056	21 34	10. 88944	358	21 1	642
22	795	22 35	205	155	22 36	845	360	22 1	640
23	893	23 37	107	254	23 37	746	362	23 1	638
24	9. 10990	24 38	10. 89010	353	24 39	647	363	24 1	637
25	9. 11087	25 40	10. 88913	452	25 41	548	365	25 1	635
26	184	26 42	816	551	26 42	449	367	26 1	633
27	281	27 43	719	649	27 44	351	368	27 1	632
28	377	28 45	623	747	28 46	253	370	28 1	630
29	474	29 46	526	845	29 47	155	371	29 1	629
30	570	30 48	430	9. 11943	30 49	10. 88057	10. 00373	30 1	9. 99627
31	666	31 50	334	9. 12040	31 51	10. 87960	375	31 1	625
32	761	32 51	239	138	32 52	862	376	32 1	624
33	857	33 53	143	235	33 54	765	378	33 1	622
34	9. 11952	34 54	10. 88048	332	34 55	668	380	34 1	620
35	9. 12047	35 56	10. 87953	428	35 57	572	382	35 1	618
36	142	36 58	858	525	36 59	475	383	36 1	617
37	236	37 59	764	621	37 60	379	385	37 1	615
38	331	38 61	669	717	38 62	283	387	38 1	613
39	425	39 62	575	813	39 64	187	388	39 1	612
40	519	40 64	481	9. 12909	40 65	10. 87091	10. 00390	40 1	9. 99610
41	612	41 66	388	9. 13004	41 67	10. 86996	392	41 1	608
42	706	42 67	294	099	42 68	901	393	42 1	607
43	799	43 69	201	194	43 70	806	395	43 1	605
44	892	44 70	108	289	44 72	711	397	44 1	603
45	9. 12985	45 72	10. 87015	384	45 73	616	399	45 1	601
46	9. 13078	46 74	10. 86922	478	46 75	522	400	46 1	600
47	171	47 75	829	573	47 77	427	402	47 1	598
48	263	48 77	737	667	48 78	333	404	48 1	596
49	355	49 78	645	761	49 80	239	405	49 1	595
50	447	50 80	553	854	50 81	146	10. 00407	50 1	9. 99593
51	539	51 82	461	9. 13948	51 83	10. 86052	409	51 1	591
52	630	52 83	370	9. 14041	52 85	10. 85959	411	52 1	589
53	722	53 85	278	134	53 86	866	412	53 1	588
54	813	54 87	187	227	54 88	773	414	54 2	586
55	904	55 88	096	320	55 90	680	416	55 2	584
56	9. 13994	56 90	10. 86006	412	56 91	588	418	56 2	582
57	9. 14085	57 91	10. 85915	504	57 93	496	419	57 2	581
58	175	58 93	825	597	58 95	403	421	58 2	579
59	266	59 95	734	688	59 96	312	423	59 2	577
60	9. 14356	60 96	10. 85644	9. 14780	60 98	10. 85220	10. 00425	60 2	9. 99575
↑	97°→	cos	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑82°

AIR NAVIGATION TABLES

Table X Logarithms of Trigonometric Functions—Continued

8°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←171° ↓
0	9. 14356	0 0	10. 85644	9. 14780	0 0	10. 85220	10. 00425	0 0	9. 99575
1	445	1 1	555	872	1 1	128	426	1 0	574
2	535	2 3	465	9. 14963	2 3	10. 85037	428	2 0	572
3	624	3 4	376	9. 15054	3 4	10. 84946	430	3 0	570
4	714	4 6	286	145	4 6	855	432	4 0	568
5	803	5 7	197	236	5 7	764	434	5 0	566
6	891	6 8	109	327	6 8	673	435	6 0	565
7	9. 14980	7 10	10. 85020	417	7 10	583	437	7 0	563
8	9. 15069	8 11	10. 84931	508	8 12	492	439	8 0	561
9	157	9 13	843	598	9 13	402	441	9 0	559
10	245	10 14	755	688	10 14	312	10. 00443	10 0	9. 99557
11	333	11 16	667	777	11 16	223	444	11 0	556
12	421	12 17	579	867	12 17	133	446	12 0	554
13	508	13 18	492	9. 15956	13 19	10. 84044	448	13 0	552
14	596	14 20	404	9. 16046	14 20	10. 83954	450	14 0	550
15	683	15 21	317	135	15 22	865	452	15 0	548
16	770	16 23	230	224	16 23	776	454	16 1	546
17	857	17 24	143	312	17 25	688	455	17 1	545
18	9. 15944	18 25	10. 84056	401	18 26	599	457	18 1	543
19	9. 16030	19 27	10. 83970	489	19 27	511	459	19 1	541
20	116	20 28	884	577	20 29	423	10. 00461	20 1	9. 99539
21	203	21 30	797	665	21 30	335	463	21 1	537
22	289	22 31	711	753	22 32	247	465	22 1	535
23	374	23 32	626	841	23 33	159	467	23 1	533
24	460	24 34	540	9. 16928	24 35	10. 83072	468	24 1	532
25	545	25 35	455	9. 17016	25 36	10. 82984	470	25 1	530
26	631	26 37	369	103	26 37	897	472	26 1	528
27	716	27 38	284	190	27 39	810	474	27 1	526
28	801	28 39	199	277	28 40	723	476	28 1	524
29	886	29 41	114	363	29 42	637	478	29 1	522
30	9. 16970	30 42	10. 83030	450	30 43	550	10. 00480	30 1	9. 99520
31	9. 17055	31 44	10. 82945	536	31 45	464	482	31 1	518
32	139	32 45	861	622	32 46	378	483	32 1	517
33	223	33 47	777	708	33 48	292	485	33 1	515
34	307	34 48	693	794	34 49	206	487	34 1	513
35	391	35 49	609	880	35 50	120	489	35 1	511
36	474	36 51	526	9. 17965	36 52	10. 82035	491	36 1	509
37	558	37 52	442	9. 18051	37 53	10. 81949	493	37 1	507
38	641	38 54	359	136	38 55	864	495	38 1	505
39	724	39 55	276	221	39 56	779	497	39 1	503
40	807	40 56	193	306	40 58	694	10. 00499	40 1	9. 99501
41	890	41 58	110	391	41 59	609	501	41 1	499
42	9. 17973	42 59	10. 82027	475	42 61	525	503	42 1	497
43	9. 18055	43 61	10. 81945	560	43 62	440	505	43 1	495
44	137	44 62	863	644	44 63	356	506	44 1	494
45	220	45 63	780	728	45 65	272	508	45 1	492
46	302	46 65	698	812	46 66	188	510	46 1	490
47	383	47 66	617	896	47 68	104	512	47 1	488
48	465	48 68	535	9. 18979	48 69	10. 81021	514	48 2	486
49	547	49 69	453	9. 19063	49 71	10. 80937	516	49 2	484
50	628	50 71	372	146	50 72	854	10. 00518	50 2	9. 99482
51	709	51 72	291	229	51 74	771	520	51 2	480
52	790	52 73	210	312	52 75	688	522	52 2	478
53	871	53 75	129	395	53 76	605	524	53 2	476
54	9. 18952	54 76	10. 81048	478	54 78	522	526	54 2	474
55	9. 19033	55 78	10. 80967	561	55 79	439	528	55 2	472
56	113	56 79	887	643	56 81	357	530	56 2	470
57	193	57 80	807	725	57 82	275	532	57 2	468
58	273	58 82	727	807	58 84	193	534	58 2	466
59	353	59 83	647	889	59 85	111	536	59 2	464
60	9. 19433	60 85	10. 80567	9. 19971	60 87	10. 80029	10. 00538	60 2	9. 99462
↑ 98°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑ 81°

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

9°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←170° ↓
0	9. 19433	0 0	10. 80567	9. 19971	0 0	10. 80029	10. 00538	0 0	9. 99462
1	513	1 1	487	9. 20053	1 1	10. 79947	540	1 0	460
2	592	2 3	408	134	2 3	866	542	2 0	458
3	672	3 4	328	216	3 4	784	544	3 0	456
4	751	4 5	249	297	4 5	703	546	4 0	454
5	830	5 6	170	378	5 6	622	548	5 0	452
6	909	6 8	091	459	6 8	541	550	6 0	450
7	9. 19988	7 9	10. 80012	540	7 9	460	552	7 0	448
8	9. 20067	8 10	10. 79933	621	8 10	379	554	8 0	446
9	145	9 11	855	701	9 12	299	556	9 0	444
10	223	10 13	777	782	10 13	218	10. 00558	10 0	9. 99442
11	302	11 14	698	862	11 14	138	560	11 0	440
12	380	12 15	620	9. 20942	12 16	10. 79058	562	12 0	438
13	458	13 16	542	9. 21022	13 17	10. 78978	564	13 0	436
14	9. 20535	14 18	10. 79465	102	14 18	898	566	14 0	434
15	613	15 19	387	182	15 19	818	568	15 1	432
16	691	16 20	309	261	16 21	739	571	16 1	429
17	768	17 21	232	341	17 22	659	573	17 1	427
18	845	18 23	155	420	18 23	580	575	18 1	425
19	922	19 24	078	9. 21499	19 25	10. 78501	577	19 1	423
20	9. 20999	20 25	10. 79001	578	20 26	422	10. 00579	20 1	9. 99421
21	9. 21076	21 26	10. 78924	657	21 27	343	581	21 1	419
22	153	22 28	847	736	22 28	264	583	22 1	417
23	229	23 29	771	814	23 30	186	585	23 1	415
24	306	24 30	694	893	24 31	107	587	24 1	413
25	382	25 31	618	9. 21971	25 32	10. 78029	589	25 1	411
26	458	26 33	542	9. 22049	26 34	10. 77951	591	26 1	409
27	9. 21534	27 34	10. 78466	127	27 35	873	593	27 1	407
28	610	28 35	390	205	28 36	795	596	28 1	404
29	685	29 37	315	283	29 38	717	598	29 1	402
30	761	30 38	239	361	30 39	639	10. 00600	30 1	9. 99400
31	836	31 39	164	438	31 40	562	602	31 1	398
32	912	32 40	088	9. 22516	32 41	10. 77484	604	32 1	396
33	9. 21987	33 42	10. 78013	593	33 43	407	606	33 1	394
34	9. 22062	34 43	10. 77938	670	34 44	330	608	34 1	392
35	137	35 44	863	747	35 45	253	610	35 1	390
36	211	36 45	789	824	36 47	176	612	36 1	388
37	286	37 47	714	901	37 48	099	615	37 1	385
38	361	38 48	639	9. 22977	38 49	10. 77023	617	38 1	383
39	435	39 49	565	9. 23054	39 50	10. 76946	619	39 1	381
40	9. 22509	40 50	10. 77491	130	40 52	870	10. 00621	40 1	9. 99379
41	583	41 52	417	206	41 53	794	623	41 1	377
42	657	42 53	343	283	42 54	717	625	42 1	375
43	731	43 54	269	359	43 56	641	628	43 2	372
44	805	44 55	195	435	44 57	565	630	44 2	370
45	878	45 57	122	9. 23510	45 58	10. 76490	632	45 2	368
46	9. 22952	46 58	10. 77048	586	46 60	414	634	46 2	366
47	9. 23025	47 59	10. 76975	661	47 61	339	636	47 2	364
48	098	48 60	902	737	48 62	263	638	48 2	362
49	171	49 62	829	812	49 63	188	641	49 2	359
50	244	50 63	756	887	50 65	113	10. 00643	50 2	9. 99357
51	317	51 64	683	9. 23962	51 66	10. 76038	645	51 2	355
52	390	52 65	610	9. 24037	52 67	10. 75963	647	52 2	353
53	462	53 67	538	112	53 69	888	649	53 2	351
54	9. 23535	54 68	10. 76465	186	54 70	814	652	54 2	348
55	607	55 69	393	261	55 71	739	654	55 2	346
56	679	56 71	321	335	56 73	665	656	56 2	344
57	752	57 72	248	410	57 74	590	658	57 2	342
58	823	58 73	177	484	58 75	516	660	58 2	340
59	895	59 74	105	558	59 76	442	663	59 2	337
60	9. 23967	60 76	10. 76033	9. 24632	60 78	10. 75368	10. 00665	60 2	9. 99335
↑ 99°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←80° ↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

$10^\circ \rightarrow$ ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos $\leftarrow 169^\circ$ ↓
0	9.23967	0 0	10.76033	9.24632	0 0	10.75368	10.00665	0 0	9.99335
1	9.24039	1 1	10.75961	706	1 1	294	667	1 0	333
2	110	2 2	890	779	2 2	221	669	2 0	331
3	181	3 3	819	853	3 4	147	672	3 0	328
4	253	4 5	747	9.24926	4 5	074	674	4 0	326
5	324	5 6	676	9.25000	5 6	10.75000	676	5 0	324
6	395	6 7	605	073	6 7	10.74927	678	6 0	322
7	9.24466	7 8	10.75534	146	7 8	854	681	7 0	319
8	536	8 9	464	219	8 9	781	683	8 0	317
9	607	9 10	393	292	9 11	708	685	9 0	315
10	677	10 11	323	365	10 12	635	10.00687	10 0	9.99313
11	748	11 13	252	9.25437	11 13	563	690	11 0	310
12	818	12 14	182	510	12 14	10.74490	692	12 0	308
13	888	13 15	112	582	13 15	418	694	13 1	306
14	9.24958	14 16	10.75042	655	14 16	345	696	14 1	304
15	9.25028	15 17	10.74972	727	15 18	273	699	15 1	301
16	098	16 18	902	799	16 19	201	701	16 1	299
17	168	17 19	832	871	17 20	129	703	17 1	297
18	237	18 20	763	9.25943	18 21	10.74057	706	18 1	294
19	307	19 22	693	9.26015	19 22	10.73985	708	19 1	292
20	376	20 23	624	086	20 24	914	10.00710	20 1	9.99290
21	445	21 24	555	158	21 25	842	712	21 1	288
22	9.25514	22 25	10.74486	229	22 26	771	715	22 1	285
23	583	23 26	417	301	23 27	699	717	23 1	283
24	652	24 27	348	372	24 28	628	719	24 1	281
25	721	25 28	279	9.26443	25 29	10.73557	722	25 1	278
26	790	26 30	210	514	26 31	486	724	26 1	276
27	858	27 31	142	585	27 32	415	726	27 1	274
28	927	28 32	073	655	28 33	345	729	28 1	271
29	9.25995	29 33	10.74005	726	29 34	274	731	29 1	269
30	9.26063	30 34	10.73937	797	30 35	203	10.00733	30 1	9.99267
31	131	31 35	869	867	31 36	133	736	31 1	264
32	199	32 36	801	9.26937	32 38	10.73063	738	32 1	262
33	267	33 38	733	9.27008	33 39	10.72992	740	33 1	260
34	335	34 39	665	078	34 40	922	743	34 1	257
35	403	35 40	597	148	35 41	852	745	35 1	255
36	9.26470	36 41	10.73530	218	36 42	782	748	36 1	252
37	538	37 42	462	288	37 44	712	750	37 1	250
38	605	38 43	395	357	38 45	643	752	38 1	248
39	672	39 44	328	427	39 46	573	755	39 2	245
40	739	40 45	261	9.27496	40 47	10.72504	10.00757	40 2	9.99243
41	806	41 47	194	566	41 48	434	759	41 2	241
42	873	42 48	127	635	42 49	365	762	42 2	238
43	9.26940	43 49	10.73060	704	43 51	296	764	43 2	236
44	9.27007	44 50	10.72993	773	44 52	227	767	44 2	233
45	073	45 51	927	842	45 53	158	769	45 2	231
46	140	46 52	860	911	46 54	089	771	46 2	229
47	206	47 53	794	9.27980	47 55	10.72020	774	47 2	226
48	273	48 55	727	9.28049	48 56	10.71951	776	48 2	224
49	339	49 56	661	117	49 58	883	779	49 2	221
50	405	50 57	595	186	50 59	814	10.00781	50 2	9.99219
51	471	51 58	529	254	51 60	746	783	51 2	217
52	9.27537	52 59	10.72463	323	52 61	677	786	52 2	214
53	602	53 60	398	391	53 62	609	788	53 2	212
54	668	54 61	332	9.28459	54 63	10.71541	791	54 2	209
55	734	55 63	266	527	55 65	473	793	55 2	207
56	799	56 64	201	595	56 66	405	796	56 2	204
57	864	57 65	136	662	57 67	338	798	57 2	202
58	930	58 66	070	730	58 68	270	800	58 2	200
59	9.27995	59 67	10.72005	798	59 69	202	803	59 2	197
60	9.28060	60 68	10.71940	9.28865	60 71	10.71135	10.00805	60 2	9.99195
↑ $100^\circ \rightarrow$	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin $\leftarrow 79^\circ$ ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

11°→ sin ↓		" Diff.		csc		tan		" Diff.		cot		sec		" Diff.		cos ←168° ↓	
0	9. 28060	0	0	10. 71940	9. 28865	0	0	10. 71135	10. 00805	0	0	9. 99195	60				
1	125	1	1	875	9. 28933	1	1	067	808	1	0	192	59				
2	190	2	2	810	9. 29000	2	2	10. 71000	810	2	0	190	58				
3	254	3	3	746	067	3	3	10. 70933	813	3	0	187	57				
4	319	4	4	681	134	4	4	866	815	4	0	185	56				
5	384	5	5	616	201	5	5	799	818	5	0	182	55				
6	448	6	6	552	268	6	6	732	820	6	0	180	54				
7	9. 28512	7	7	10. 71488	335	7	8	665	823	7	0	177	53				
8	577	8	8	423	402	8	9	598	825	8	0	175	52				
9	641	9	9	359	468	9	10	532	828	9	0	172	51				
10	705	10	10	295	9. 29535	10	11	10. 70465	10. 00830	10	0	9. 99170	50				
11	769	11	11	231	601	11	12	399	833	11	0	167	49				
12	833	12	12	167	668	12	13	332	835	12	1	165	48				
13	896	13	13	104	734	13	14	266	838	13	1	162	47				
14	9. 28960	14	14	10. 71040	800	14	15	200	840	14	1	160	46				
15	9. 29024	15	16	10. 70976	866	15	16	134	843	15	1	157	45				
16	087	16	17	913	932	16	17	068	845	16	1	155	44				
17	150	17	18	850	9. 29998	17	18	10. 70002	848	17	1	152	43				
18	214	18	19	786	9. 30064	18	19	10. 69936	850	18	1	150	42				
19	277	19	20	723	130	19	20	870	853	19	1	147	41				
20	340	20	21	660	195	20	22	805	10. 00855	20	1	9. 99145	40				
21	403	21	22	597	261	21	23	739	858	21	1	142	39				
22	9. 29466	22	23	10. 70534	326	22	24	674	860	22	1	140	38				
23	529	23	24	471	391	23	25	609	863	23	1	137	37				
24	591	24	25	409	457	24	26	543	865	24	1	135	36				
25	654	25	26	346	9. 30522	25	27	10. 69478	868	25	1	132	35				
26	716	26	27	284	587	26	28	413	870	26	1	130	34				
27	779	27	28	221	652	27	29	348	873	27	1	127	33				
28	841	28	29	159	717	28	30	283	876	28	1	124	32				
29	903	29	30	97	782	29	31	218	878	29	1	122	31				
30	9. 29966	30	31	10. 70034	846	30	32	154	10. 00881	30	1	9. 99119	30				
31	9. 30028	31	32	10. 69972	911	31	33	089	883	31	1	117	29				
32	090	32	33	910	9. 30975	32	35	10. 69025	886	32	1	114	28				
33	151	33	34	849	9. 31040	33	36	10. 68960	888	33	1	112	27				
34	213	34	35	787	104	34	37	896	891	34	1	109	26				
35	275	35	36	725	168	35	38	832	894	35	2	106	25				
36	336	36	37	664	233	36	39	767	896	36	2	104	24				
37	398	37	38	602	297	37	40	703	899	37	2	101	23				
38	9. 30459	38	39	10. 69541	361	38	41	639	901	38	2	099	22				
39	521	39	40	479	425	39	42	575	904	39	2	096	21				
40	582	40	41	418	9. 31489	40	43	10. 68511	10. 00907	40	2	9. 99093	20				
41	643	41	42	357	552	41	44	448	909	41	2	091	19				
42	704	42	43	296	616	42	45	384	912	42	2	088	18				
43	765	43	45	235	679	43	46	321	914	43	2	086	17				
44	826	44	46	174	743	44	47	257	917	44	2	083	16				
45	887	45	47	113	806	45	49	194	920	45	2	080	15				
46	9. 30947	46	48	10. 69053	870	46	50	130	922	46	2	078	14				
47	9. 31008	47	49	10. 68992	933	47	51	067	925	47	2	075	13				
48	068	48	50	932	9. 31996	48	52	10. 68004	928	48	2	072	12				
49	129	49	51	871	9. 32059	49	53	10. 67941	930	49	2	070	11				
50	189	50	52	811	122	50	54	878	10. 00933	50	2	9. 99067	10				
51	250	51	53	750	185	51	55	815	936	51	2	064	9				
52	310	52	54	690	248	52	56	752	938	52	2	062	8				
53	370	53	55	630	311	53	57	689	941	53	2	059	7				
54	9. 31430	54	56	10. 68570	373	54	58	627	944	54	2	056	6				
55	490	55	57	510	9. 32436	55	59	10. 67564	946	55	2	054	5				
56	549	56	58	451	498	56	60	502	949	56	2	051	4				
57	609	57	59	391	561	57	61	439	952	57	2	048	3				
58	669	58	60	331	623	58	63	377	954	58	2	046	2				
59	728	59	61	272	685	59	64	315	957	59	3	043	1				
60	9. 31788	60	62	10. 68212	9. 32747	60	65	10. 67253	10. 00960	60	3	9. 99040	0				
↑101°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←78° ↑									

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

12°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←167° ↓
0	9. 31788	0	10. 68212	9. 32747	0	10. 67253	10. 00960	0	9. 99040
1	847	1	153	810	1	190	962	1	038
2	907	2	093	872	2	128	965	2	035
3	9. 31966	3	10. 68034	933	3	067	968	3	032
4	9. 32025	4	10. 67975	9. 32995	4	10. 67005	970	4	030
5	084	5	916	9. 33057	5	10. 66943	973	5	027
6	143	6	857	119	6	881	976	6	024
7	202	7	798	180	7	820	10. 00978	7	9. 99022
8	261	8	739	242	8	758	981	8	019
9	319	9	681	303	9	697	984	9	016
10	378	10	622	365	10	635	987	10	013
11	437	11	563	426	11	574	989	11	011
12	9. 32495	12	10. 67505	9. 33487	12	10. 66513	992	12	008
13	553	13	447	548	13	452	995	13	005
14	612	14	388	609	14	391	10. 00998	14	002
15	670	15	330	670	15	330	10. 01000	15	9. 99000
16	728	16	272	731	16	269	003	16	9. 98997
17	786	17	214	792	17	208	006	17	994
18	844	18	156	853	18	147	009	18	991
19	902	19	098	913	19	087	011	19	989
20	9. 32960	20	10. 67040	9. 33974	20	10. 66026	014	20	986
21	9. 33018	21	10. 66982	9. 34034	21	10. 65966	017	21	983
22	075	22	925	095	22	905	020	22	980
23	133	23	867	155	23	845	022	23	978
24	190	24	810	215	24	785	10. 01025	24	9. 98975
25	248	25	752	276	25	724	028	25	972
26	305	26	695	336	26	664	031	26	969
27	362	27	638	396	27	604	033	27	967
28	420	28	580	456	28	544	036	28	964
29	477	29	523	9. 34516	29	10. 65484	039	29	961
30	9. 33534	30	10. 66466	576	30	424	042	30	958
31	591	31	409	635	31	365	045	31	9. 98955
32	647	32	353	695	32	305	10. 01047	32	953
33	704	33	296	755	33	245	050	33	950
34	761	34	239	814	34	186	053	34	947
35	818	35	182	874	35	126	056	35	944
36	874	36	126	933	36	067	059	36	941
37	931	37	069	9. 34992	37	10. 65008	062	37	938
38	9. 33987	38	10. 66013	9. 35051	38	10. 64949	10. 01064	38	9. 98936
39	9. 34043	39	10. 65957	111	39	889	067	39	933
40	100	40	900	170	40	830	070	40	930
41	156	41	844	229	41	771	073	41	927
42	212	42	788	288	42	712	076	42	924
43	268	43	732	347	43	653	079	43	921
44	324	44	676	405	44	595	081	44	919
45	380	45	620	464	45	536	10. 01084	45	9. 98916
46	436	46	564	9. 35523	46	10. 64477	087	46	913
47	491	47	509	581	47	419	090	47	910
48	9. 34547	48	10. 65453	640	48	360	093	48	907
49	602	49	398	698	49	302	096	49	904
50	658	50	342	757	50	243	099	50	901
51	713	51	287	815	51	185	102	51	898
52	769	52	231	873	52	127	10. 01104	52	9. 98896
53	824	53	176	931	53	069	107	53	893
54	879	54	121	9. 35989	54	10. 64011	110	54	890
55	934	55	066	9. 36047	55	10. 63953	113	55	887
56	9. 34989	56	10. 65011	105	56	895	116	56	884
57	9. 35044	57	10. 64956	163	57	837	119	57	881
58	099	58	901	221	58	779	122	58	878
59	154	59	846	279	59	721	125	59	875
60	9. 35209	60	10. 64791	9. 36336	60	10. 63664	10. 01128	60	9. 98872
↑ 102°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑77°	

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

13°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←166° ↓
0	9. 35209	0 0	10. 64791	9. 36336	0 0	10. 63664	10. 01128	0 0	9. 98872
1	263	1 1	737	394	1 1	606	131	1 0	869
2	318	2 2	682	452	2 2	548	133	2 0	867
3	373	3 3	627	509	3 3	491	136	3 0	864
4	427	4 4	573	566	4 4	434	139	4 0	861
5	481	5 4	519	9. 36624	5 5	10. 63376	142	5 0	858
6	536	6 5	464	681	6 6	319	145	6 0	855
7	9. 35590	7 6	10. 64410	738	7 6	262	148	7 0	852
8	644	8 7	356	795	8 7	205	151	8 0	849
9	698	9 8	302	852	9 8	148	154	9 0	846
10	752	10 9	248	909	10 9	091	10. 01157	10 1	9. 98843
11	806	11 10	194	9. 36966	11 10	10. 63034	160	11 1	840
12	860	12 11	140	9. 37023	12 11	10. 62977	163	12 1	837
13	914	13 11	086	080	13 12	920	166	13 1	834
14	9. 35968	14 12	10. 64032	137	14 13	863	169	14 1	831
15	9. 36022	15 13	10. 63978	193	15 14	807	172	15 1	828
16	075	16 14	925	250	16 15	750	175	16 1	825
17	129	17 15	871	306	17 16	694	178	17 1	822
18	182	18 16	818	363	18 17	637	181	18 1	819
19	236	19 17	764	419	19 18	581	184	19 1	816
20	289	20 18	711	9. 37476	20 19	10. 62524	10. 01187	20 1	9. 98813
21	342	21 18	658	532	21 19	468	190	21 1	810
22	395	23 19	605	588	22 20	412	193	22 1	807
23	449	23 20	551	644	23 21	356	196	23 1	804
24	9. 36502	24 21	10. 63498	700	24 22	300	199	24 1	801
25	555	25 22	445	756	25 23	244	202	25 1	798
26	608	26 23	392	812	26 24	188	205	26 1	795
27	660	27 24	340	868	27 25	132	208	27 1	792
28	713	28 25	287	924	28 26	076	211	28 1	789
29	766	29 25	234	9. 37980	29 27	10. 62020	214	29 1	786
30	819	30 26	181	9. 38035	30 28	10. 61965	10. 01217	30 2	9. 98783
31	871	31 27	129	091	31 29	909	220	31 2	780
32	924	32 28	076	147	32 30	853	223	32 2	777
33	9. 36976	33 29	10. 63024	202	33 31	798	226	33 2	774
34	9. 37028	34 30	10. 62972	257	34 32	743	229	34 2	771
35	081	35 31	919	313	35 32	687	232	35 2	768
36	133	36 32	867	368	36 33	632	235	36 2	765
37	185	37 32	815	423	37 34	577	238	37 2	762
38	237	38 33	763	479	38 35	521	241	38 2	759
39	289	39 34	711	9. 38534	39 36	10. 61466	244	39 2	756
40	341	40 35	659	589	40 37	411	10. 01247	40 2	9. 98753
41	393	41 36	607	644	41 38	356	250	41 2	750
42	445	42 37	555	699	42 39	301	254	42 2	746
43	9. 37497	43 38	10. 62503	754	43 40	246	257	43 2	743
44	549	44 39	451	808	44 41	192	260	44 2	740
45	600	45 39	400	863	45 42	137	263	45 2	737
46	652	46 40	348	918	46 43	082	266	46 2	734
47	703	47 41	297	9. 38972	47 44	10. 61028	269	47 2	731
48	755	48 42	245	9. 39027	48 45	10. 60973	272	48 2	728
49	806	49 43	194	082	49 45	918	275	49 2	725
50	858	50 44	142	136	50 46	864	10. 01278	50 3	9. 98722
51	909	51 45	091	190	51 47	810	281	51 3	719
52	9. 37960	52 46	10. 62040	245	52 48	755	285	52 3	715
53	9. 38011	53 47	10. 61989	299	53 49	701	288	53 3	712
54	062	54 47	938	9. 39353	54 50	10. 60647	291	54 3	709
55	113	55 48	887	407	55 51	593	294	55 3	706
56	164	56 49	836	461	56 52	539	297	56 3	703
57	215	57 50	785	515	57 53	485	300	57 3	700
58	266	58 51	734	569	58 54	431	303	58 3	697
59	317	59 52	683	623	59 55	377	306	59 3	694
60	9. 38368	60 53	10. 61632	9. 39677	60 56	10. 60323	10. 01310	60 3	9. 98690
↑ 103°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑ 76°	

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

14°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←165°
↓									↓
0	9. 38368	0	10. 61632	9. 39677	0	10. 60323	10. 01310	0	9. 98690
1	418	1	582	731	1	269	313	1	687
2	469	2	531	785	2	215	316	2	684
3	519	3	481	838	3	162	319	3	681
4	570	4	430	892	4	108	322	4	678
5	620	5	380	945	5	056	325	5	675
6	9. 38670	6	10. 61330	9. 39999	6	10. 60001	329	6	671
7	721	7	279	9. 40052	7	10. 59948	332	7	668
8	771	8	229	106	8	894	335	8	665
9	821	9	179	159	9	841	338	9	662
10	871	10	129	212	10	788	10. 01341	10	9. 98659
11	921	11	079	266	11	734	344	11	656
12	9. 38971	12	10. 61029	319	12	681	348	12	652
13	9. 39021	13	10. 60979	372	13	628	351	13	649
14	071	14	929	425	14	575	354	14	646
15	121	15	879	9. 40478	15	10. 59522	357	15	643
16	170	16	830	531	16	469	360	16	640
17	220	17	780	584	17	416	364	17	636
18	270	18	730	636	18	364	367	18	633
19	319	19	681	689	19	311	370	19	630
20	369	20	631	742	20	258	10. 01373	20	9. 98627
21	418	21	582	795	21	205	377	21	623
22	9. 39467	22	10. 60533	847	22	153	380	22	620
23	517	23	483	900	23	100	383	23	617
24	566	24	434	9. 40952	24	10. 59048	386	24	614
25	615	25	385	9. 41005	25	10. 58995	390	25	610
26	664	26	336	057	26	943	393	26	607
27	713	27	287	109	27	891	396	27	604
28	762	28	238	161	28	839	399	28	601
29	811	29	189	214	29	786	403	29	597
30	860	30	140	266	30	734	10. 01406	30	9. 98594
31	909	31	091	318	31	682	409	31	591
32	9. 39958	32	10. 60042	370	32	630	412	32	588
33	9. 40006	33	10. 59994	422	33	578	416	33	584
34	055	34	945	474	34	526	419	34	581
35	103	35	897	9. 41526	35	10. 58474	422	35	578
36	152	36	848	578	36	422	426	36	574
37	200	37	800	629	37	371	429	37	571
38	249	38	751	681	38	319	432	38	568
39	297	39	703	733	39	267	435	39	565
40	346	40	654	784	40	216	10. 01439	40	9. 98561
41	394	41	606	836	41	164	442	41	558
42	442	42	558	887	42	113	445	42	555
43	9. 40490	43	10. 59510	939	43	061	449	43	551
44	538	44	462	9. 41990	44	10. 58010	452	44	548
45	586	45	414	9. 42041	45	10. 57959	455	45	545
46	634	46	366	093	46	907	459	46	541
47	682	47	318	144	47	856	462	47	538
48	730	48	270	195	48	805	465	48	535
49	778	49	222	246	49	754	469	49	531
50	825	50	175	297	50	703	10. 01472	50	9. 98528
51	873	51	127	348	51	652	475	51	525
52	921	52	079	399	52	601	479	52	521
53	9. 40968	53	10. 59032	9. 42450	53	10. 57550	482	53	518
54	9. 41016	54	10. 58984	501	54	499	485	54	515
55	063	55	937	552	55	448	489	55	511
56	111	56	889	603	56	397	492	56	508
57	158	57	842	653	57	347	495	57	505
58	205	58	795	704	58	296	499	58	501
59	252	59	748	755	59	245	502	59	498
60	9. 41300	60	10. 58700	9. 42805	60	10. 57195	10. 01506	60	9. 98494
↑	104°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑75°

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

15°→ sin		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←164°
↓									↓
0	9. 41300	0 0	10. 58700	9. 42805	0 0	10. 57195	10. 01506	0 0	9. 98494
1	347	1 1	653	856	1 1	144	509	1 0	491
2	394	2 2	606	906	2 2	094	512	2 0	488
3	441	3 2	559	9. 42957	3 2	10. 57043	516	3 0	484
4	488	4 3	512	9. 43007	4 3	10. 56993	519	4 0	481
5	535	5 4	465	057	5 4	943	523	5 0	477
6	582	6 5	418	108	6 5	892	526	6 0	474
7	9. 41628	7 5	10. 58372	158	7 6	842	529	7 0	471
8	675	8 6	325	208	8 7	792	533	8 0	467
9	722	9 7	278	258	9 7	742	536	9 1	464
10	768	10 8	232	308	10 8	692	10. 01540	10 1	9. 98460
11	815	11 8	185	358	11 9	642	543	11 1	457
12	861	12 9	139	408	12 10	592	547	12 1	453
13	908	13 10	092	458	13 11	542	550	13 1	450
14	9. 41954	14 11	10. 58046	9. 43508	14 11	10. 56492	553	14 1	447
15	9. 42001	15 11	10. 57999	558	15 12	442	557	15 1	443
16	047	16 12	953	607	16 13	393	560	16 1	440
17	093	17 13	907	657	17 14	343	564	17 1	436
18	140	18 14	860	707	18 15	293	567	18 1	433
19	186	19 14	814	756	19 16	244	571	19 1	429
20	232	20 15	768	806	20 16	194	10. 01574	20 1	9. 98426
21	278	21 16	722	855	21 17	145	578	21 1	422
22	324	22 17	676	905	22 18	095	581	22 1	419
23	370	23 17	630	9. 43954	23 19	10. 56046	585	23 1	415
24	416	24 18	584	9. 44004	24 20	10. 55996	588	24 1	412
25	9. 42461	25 19	10. 57539	053	25 20	947	591	25 1	409
26	507	26 20	493	102	26 21	898	595	26 2	405
27	553	27 21	447	151	27 22	849	598	27 2	402
28	599	28 21	401	201	28 23	799	602	28 2	398
29	644	29 22	356	250	29 24	750	605	29 2	395
30	690	30 23	310	299	30 25	701	10. 01609	30 2	9. 98391
31	735	31 24	265	348	31 25	652	612	31 2	388
32	781	32 24	219	397	32 26	603	616	32 2	384
33	826	33 25	174	446	33 27	554	619	33 2	381
34	872	34 26	128	9. 44495	34 28	10. 55505	623	34 2	377
35	917	35 27	083	544	35 29	456	627	35 2	373
36	9. 42962	36 27	10. 57038	592	36 29	408	630	36 2	370
37	9. 43008	37 28	10. 56992	641	37 30	359	634	37 2	366
38	053	38 29	947	690	38 31	310	637	38 2	363
39	098	39 30	902	738	39 32	262	641	39 2	359
40	143	40 30	857	787	40 33	213	10. 01644	40 2	9. 98356
41	188	41 31	812	836	41 34	164	648	41 2	352
42	233	42 32	767	884	42 34	116	651	42 2	349
43	278	43 33	722	933	43 35	067	655	43 3	345
44	323	44 33	677	9. 44981	44 36	10. 55019	658	44 3	342
45	367	45 34	633	9. 45029	45 37	10. 54971	662	45 3	338
46	412	46 35	588	078	46 38	922	666	46 3	334
47	457	47 36	543	126	47 38	874	669	47 3	331
48	9. 43502	48 36	10. 56498	174	48 39	826	673	48 3	327
49	546	49 37	454	222	49 40	778	676	49 3	324
50	591	50 38	409	271	50 41	729	10. 01680	50 3	9. 98320
51	635	51 39	365	319	51 42	681	683	51 3	317
52	680	52 39	320	367	52 43	633	687	52 3	313
53	724	53 40	276	9. 45415	53 43	10. 54585	691	53 3	309
54	769	54 41	231	463	54 44	537	694	54 3	306
55	813	55 42	187	511	55 45	489	698	55 3	302
56	857	56 43	143	559	56 46	441	701	56 3	299
57	901	57 43	099	606	57 47	394	705	57 3	295
58	946	58 44	054	654	58 47	346	709	58 3	291
59	9. 43990	59 45	10. 56010	702	59 48	298	712	59 3	288
60	9. 44034	60 46	10. 55966	9. 45750	60 49	10. 54250	10. 01716	60 4	9. 98284
↑									↑
105°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←74°	

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Table X. Logarithms of Trigonometric Functions—Continued

16°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←163° ↓
0	9. 44034	0	10. 55966	9. 45750	0	10. 54250	10. 01716	0	9. 98284
1	078	1	922	797	1	203	719	1	281
2	122	2	878	845	2	155	723	2	277
3	166	3	834	892	3	108	727	3	273
4	210	4	790	940	4	060	730	4	270
5	253	5	747	9. 45987	5	10. 54013	734	5	266
6	297	6	703	9. 46035	6	10. 53965	738	6	262
7	9. 44341	7	10. 55659	082	7	918	741	7	259
8	385	8	615	130	8	870	745	8	255
9	428	9	572	177	9	823	749	9	251
10	472	10	528	224	10	776	10. 01752	10	9. 98248
11	516	11	484	271	11	729	756	11	244
12	559	12	441	319	12	681	760	12	240
13	602	13	398	366	13	634	763	13	237
14	646	14	354	413	14	587	767	14	233
15	9. 44689	15	10. 55311	460	15	540	771	15	229
16	733	16	267	9. 46507	16	10. 53493	774	16	226
17	776	17	224	554	17	446	778	17	222
18	819	18	181	601	18	399	782	18	218
19	862	19	138	648	19	352	785	19	215
20	905	20	095	694	20	306	10. 01789	20	9. 98211
21	948	21	052	741	21	259	793	21	207
22	9. 44992	22	10. 55008	788	22	212	796	22	204
23	9. 45035	23	10. 54965	835	23	165	800	23	200
24	077	24	923	881	24	119	804	24	196
25	120	25	880	928	25	072	808	25	192
26	163	26	837	9. 46975	26	10. 53025	811	26	189
27	206	27	794	9. 47021	27	10. 52979	815	27	185
28	249	28	751	068	28	932	819	28	181
29	292	29	708	114	29	886	823	29	177
30	9. 45334	30	10. 54666	160	30	840	10. 01826	30	9. 98174
31	377	31	623	207	31	793	830	31	170
32	419	32	581	253	32	747	834	32	166
33	462	33	538	299	33	701	838	33	162
34	504	34	496	346	34	654	841	34	159
35	547	35	453	392	35	608	845	35	155
36	589	36	411	438	36	562	849	36	151
37	632	37	368	484	37	516	853	37	147
38	9. 45674	38	10. 54326	9. 47530	38	10. 52470	856	38	144
39	716	39	284	576	39	424	860	39	140
40	758	40	242	622	40	378	10. 01864	40	9. 98136
41	801	41	199	668	41	332	868	41	132
42	843	42	157	714	42	286	871	42	129
43	885	43	115	760	43	240	875	43	125
44	927	44	073	806	44	194	879	44	121
45	9. 45969	45	10. 54031	852	45	148	883	45	117
46	9. 46011	46	10. 53989	897	46	103	887	46	113
47	053	47	947	943	47	057	890	47	110
48	095	48	905	9. 47989	48	10. 52011	894	48	106
49	136	49	864	9. 48035	49	10. 51965	898	49	102
50	178	50	822	080	50	920	10. 01902	50	9. 98098
51	220	51	780	126	51	874	906	51	094
52	262	52	738	171	52	829	910	52	090
53	9. 46303	53	10. 53697	217	53	783	913	53	087
54	345	54	655	262	54	738	917	54	083
55	386	55	614	307	55	693	921	55	079
56	428	56	572	353	56	647	925	56	075
57	469	57	531	398	57	602	929	57	071
58	511	58	489	443	58	557	933	58	067
59	552	59	448	489	59	511	937	59	063
60	9. 46594	60	10. 53406	9. 48534	60	10. 51466	10. 01940	60	9. 98060
↑ 106°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑73°	

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

17°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←162°
↓									↓
0	9. 46594	0 0	10. 53406	9. 48534	0 0	10. 51466	10. 01940	0 0	9. 98060
1	635	1 1	365	579	1 1	421	944	1 0	056
2	676	2 1	324	624	2 1	376	948	2 0	052
3	717	3 2	283	669	3 2	331	952	3 0	048
4	758	4 3	242	714	4 3	286	956	4 0	044
5	800	5 3	200	759	5 4	241	960	5 0	040
6	841	6 4	159	804	6 4	196	964	6 0	036
7	882	7 5	118	849	7 5	151	10. 01968	7 0	9. 98032
8	923	8 5	077	894	8 6	106	971	8 1	029
9	9. 46964	9 6	10. 53036	939	9 7	061	975	9 1	025
10	9. 47005	10 7	10. 52995	9. 48984	10 7	10. 51016	979	10 1	021
11	045	11 7	955	9. 49029	11 8	10. 50971	983	11 1	017
12	086	12 8	914	073	12 9	927	987	12 1	013
13	127	13 9	873	118	13 10	882	991	13 1	009
14	168	14 9	832	163	14 10	837	995	14 1	005
15	209	15 10	791	207	15 11	793	10. 01999	15 1	9. 98001
16	249	16 11	751	252	16 12	748	10. 02003	16 1	9. 97997
17	290	17 11	710	296	17 12	704	007	17 1	993
18	9. 47330	18 12	10. 52670	341	18 13	659	011	18 1	989
19	371	19 13	629	385	19 14	615	014	19 1	986
20	411	20 13	589	430	20 15	570	018	20 1	982
21	452	21 14	548	9. 49474	21 15	10. 50526	022	21 1	978
22	492	22 15	508	519	22 16	481	026	22 1	974
23	533	23 15	467	563	23 17	437	030	23 2	970
24	573	24 16	427	607	24 18	393	10. 02034	24 2	9. 97966
25	613	25 17	387	652	25 18	348	038	25 2	962
26	9. 47654	26 17	10. 52346	696	26 19	304	042	26 2	958
27	694	27 18	306	740	27 20	260	046	27 2	954
28	734	28 19	266	784	28 21	216	050	28 2	950
29	774	29 19	226	828	29 21	172	054	29 2	946
30	814	30 20	186	872	30 22	128	058	30 2	942
31	854	31 21	146	916	31 23	084	062	31 2	938
32	894	32 21	106	9. 49960	32 24	10. 50040	066	32 2	934
33	934	33 22	066	9. 50004	33 24	10. 49996	10. 02070	33 2	9. 97930
34	9. 47974	34 23	10. 52026	048	34 25	952	074	34 2	926
35	9. 48014	35 23	10. 51986	092	35 26	908	078	35 2	922
36	054	36 24	946	136	36 26	864	082	36 2	918
37	094	37 25	906	180	37 27	820	086	37 2	914
38	133	38 25	867	223	38 28	777	090	38 3	910
39	173	39 26	827	267	39 29	733	094	39 3	906
40	213	40 27	787	311	40 29	689	098	40 3	902
41	252	41 27	748	355	41 30	645	102	41 3	898
42	292	42 28	708	398	42 31	602	10. 02106	42 3	9. 97894
43	9. 48332	43 29	10. 51668	442	43 32	558	110	43 3	890
44	371	44 29	629	9. 50485	44 32	10. 49515	114	44 3	886
45	411	45 30	589	529	45 33	471	118	45 3	882
46	450	46 31	550	572	46 34	428	122	46 3	878
47	490	47 31	510	616	47 35	384	126	47 3	874
48	529	48 32	471	659	48 35	341	130	48 3	870
49	568	49 33	432	703	49 36	297	134	49 3	866
50	607	50 33	393	746	50 37	254	139	50 3	861
51	9. 48647	51 34	10. 51353	789	51 37	211	10. 02143	51 3	9. 97857
52	686	52 35	314	833	52 38	167	147	52 3	853
53	725	53 35	275	876	53 39	124	151	53 4	849
54	764	54 36	236	919	54 40	081	155	54 4	845
55	803	55 37	197	9. 50962	55 40	10. 49038	159	55 4	841
56	842	56 37	158	9. 51005	56 41	10. 48995	163	56 4	837
57	881	57 38	119	048	57 42	952	167	57 4	833
58	920	58 39	080	092	58 43	908	171	58 4	829
59	959	59 39	041	135	59 43	865	175	59 4	825
60	9. 48998	60 40	10. 51002	9. 51178	60 44	10. 48822	10. 02179	60 4	9. 97821
↑	107°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←72°
									↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

18°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←161°
↓									↓
0	9.48998	0 0	10.51002	9.51178	0 0	10.48822	10.02179	0 0	9.97821
1	9.49037	1 1	10.50963	221	1 1	779	183	1 0	817
2	076	2 1	924	264	2 1	736	188	2 0	812
3	115	3 2	885	306	3 2	694	192	3 0	808
4	153	4 3	847	349	4 3	651	196	4 0	804
5	192	5 3	808	392	5 3	608	200	5 0	800
6	231	6 4	769	435	6 4	565	204	6 0	796
7	269	7 4	731	478	7 5	522	208	7 0	792
8	308	8 5	692	520	8 6	480	212	8 1	788
9	347	9 6	653	563	9 6	437	216	9 1	784
10	9.49385	10 6	10.50615	9.51606	10 7	10.48394	10.02221	10 1	9.97779
11	424	11 7	576	648	11 8	352	225	11 1	775
12	462	12 8	538	691	12 8	309	229	12 1	771
13	500	13 8	500	734	13 9	266	233	13 1	767
14	539	14 9	461	776	14 10	224	237	14 1	763
15	577	15 9	423	819	15 10	181	241	15 1	759
16	615	16 10	385	861	16 11	139	246	16 1	754
17	654	17 11	346	903	17 12	97	250	17 1	750
18	9.49692	18 11	10.50308	946	18 13	054	254	18 1	746
19	730	19 12	270	9.51988	19 13	10.48012	258	19 1	742
20	768	20 13	232	9.52031	20 14	10.47969	10.02262	20 1	9.97738
21	806	21 13	194	073	21 15	927	266	21 1	734
22	844	22 14	156	115	22 15	885	271	22 2	729
23	882	23 14	118	157	23 16	843	275	23 2	725
24	920	24 15	080	200	24 17	800	279	24 2	721
25	958	25 16	042	242	25 17	758	283	25 2	717
26	9.49996	26 16	10.50004	284	26 18	716	287	26 2	713
27	9.50034	27 17	10.49966	9.52326	27 19	10.47674	292	27 2	708
28	072	28 18	928	368	28 20	632	296	28 2	704
29	110	29 18	890	410	29 20	590	300	29 2	700
30	148	30 19	852	452	30 21	548	10.02304	30 2	9.97696
31	185	31 20	815	494	31 22	506	309	31 2	691
32	223	32 20	777	536	32 22	464	313	32 2	687
33	261	33 21	739	578	33 23	422	317	33 2	683
34	298	34 21	702	620	34 24	380	321	34 2	679
35	9.50336	35 22	10.49664	9.52661	35 24	10.47339	326	35 2	674
36	374	36 23	626	703	36 25	297	330	36 3	670
37	411	37 23	589	745	37 26	255	334	37 3	666
38	449	38 24	551	787	38 27	213	338	38 3	662
39	486	39 25	514	829	39 27	171	343	39 3	657
40	523	40 25	477	870	40 28	130	10.02347	40 3	9.97653
41	561	41 26	439	912	41 29	088	351	41 3	649
42	598	42 26	402	953	42 29	047	355	42 3	645
43	635	43 27	365	9.52995	43 30	10.47005	360	43 3	640
44	9.50673	44 28	10.49327	9.53037	44 31	10.46963	364	44 3	636
45	710	45 28	290	078	45 31	922	368	45 3	632
46	747	46 29	253	120	46 32	880	372	46 3	628
47	784	47 30	216	161	47 33	839	377	47 3	623
48	821	48 30	179	202	48 34	798	381	48 3	619
49	858	49 31	142	244	49 34	756	385	49 3	615
50	896	50 31	104	285	50 35	715	10.02390	50 4	9.97610
51	933	51 32	067	327	51 36	673	394	51 4	606
52	9.50970	52 33	10.49030	9.53368	52 36	10.46632	398	52 4	602
53	9.51007	53 33	10.48993	409	53 37	591	403	53 4	597
54	043	54 34	957	450	54 38	550	407	54 4	593
55	080	55 35	920	492	55 38	508	411	55 4	589
56	117	56 35	883	533	56 39	467	416	56 4	584
57	154	57 36	846	574	57 40	426	420	57 4	580
58	191	58 37	809	615	58 41	385	424	58 4	576
59	227	59 37	773	656	59 41	344	429	59 4	571
60	9.51264	60 38	10.48736	9.53697	60 42	10.46303	10.02433	60 4	9.97567
↑108°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←71°
↑									↑

ARMY AIR FORCES

Table X Logarithms of Trigonometric Functions—Continued

19°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←160° ↓
0	9. 51264	0 0	10. 48736	9. 53697	0 0	10. 46303	10. 02433	0 0	9. 97567
1	301	1 1	689	738	1 1	262	437	1 0	563
2	338	2 1	662	779	2 1	221	442	2 0	558
3	374	3 2	626	820	3 2	180	446	3 0	554
4	411	4 2	589	861	4 3	139	450	4 0	550
5	447	5 3	553	902	5 3	098	455	5 0	545
6	484	6 4	516	943	6 4	057	459	6 0	541
7	520	7 4	480	9. 53984	7 5	10. 46016	464	7 1	536
8	557	8 5	443	9. 54025	8 5	10. 45975	468	8 1	532
9	593	9 5	407	065	9 6	935	472	9 1	528
10	9. 51629	10 6	10. 48371	106	10 7	894	10. 02477	10 1	9. 97523
11	666	11 7	334	147	11 7	853	481	11 1	519
12	702	12 7	298	187	12 8	813	485	12 1	515
13	738	13 8	262	228	13 9	772	490	13 1	510
14	774	14 8	226	269	14 9	731	494	14 1	506
15	811	15 9	189	309	15 10	691	499	15 1	501
16	847	16 10	153	9. 54350	16 11	10. 45650	503	16 1	497
17	883	17 10	117	390	17 11	610	508	17 1	492
18	919	18 11	081	431	18 12	569	512	18 1	488
19	955	19 11	045	471	19 13	529	516	19 1	484
20	9. 51991	20 12	10. 48009	512	20 13	488	10. 02521	20 1	9. 97479
21	9. 52027	21 12	10. 47973	552	21 14	448	525	21 2	475
22	063	22 13	937	593	22 15	407	530	22 2	470
23	099	23 14	901	633	23 15	367	534	23 2	466
24	135	24 14	865	9. 54673	24 16	10. 45327	539	24 2	461
25	171	25 15	829	714	25 17	286	543	25 2	457
26	207	26 15	793	754	26 17	246	547	26 2	453
27	242	27 16	758	794	27 18	206	552	27 2	448
28	278	28 17	722	835	28 19	165	556	28 2	444
29	314	29 17	686	875	29 19	125	561	29 2	439
30	9. 52350	30 18	10. 47650	915	30 20	085	10. 02565	30 2	9. 97435
31	385	31 18	615	955	31 21	045	570	31 2	430
32	421	32 19	579	9. 54995	32 21	10. 45005	574	32 2	426
33	456	33 20	544	9. 55035	33 22	10. 44965	579	33 2	421
34	492	34 20	508	075	34 23	925	583	34 3	417
35	527	35 21	473	115	35 23	885	588	35 3	412
36	563	36 21	437	155	36 24	845	592	36 3	408
37	598	37 22	402	195	37 25	805	597	37 3	403
38	634	38 23	366	235	38 25	765	601	38 3	399
39	9. 52669	39 23	10. 47331	275	39 26	725	606	39 3	394
40	705	40 24	295	315	40 27	685	10. 02610	40 3	9. 97390
41	740	41 24	260	9. 55355	41 27	10. 44645	615	41 3	385
42	775	42 25	225	395	42 28	605	619	42 3	381
43	811	43 26	189	434	43 29	566	624	43 3	376
44	846	44 26	154	474	44 29	526	628	44 3	372
45	881	45 27	119	514	45 30	486	633	45 3	367
46	916	46 27	084	554	46 31	446	637	46 3	363
47	951	47 28	049	593	47 31	407	642	47 3	358
48	9. 52986	48 29	10. 47014	633	48 32	367	647	48 4	353
49	9. 53021	49 29	10. 46979	9. 55673	49 33	10. 44327	651	49 4	349
50	056	50 30	944	712	50 33	288	10. 02656	50 4	9. 97344
51	092	51 30	908	752	51 34	248	660	51 4	340
52	126	52 31	874	791	52 35	209	665	52 4	335
53	161	53 32	839	831	53 35	169	669	53 4	331
54	196	54 32	804	870	54 36	130	674	54 4	326
55	231	55 33	769	910	55 37	090	678	55 4	322
56	266	56 33	734	949	56 37	051	683	56 4	317
57	301	57 34	699	9. 55989	57 38	10. 44011	688	57 4	312
58	336	58 34	664	9. 56028	58 39	10. 43972	692	58 4	308
59	370	59 35	630	067	59 39	933	697	59 4	303
60	9. 53405	60 36	10. 46595	9. 56107	60 40	10. 43893	10. 02701	60 4	9. 97299
↑ 109°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←70° ↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

20°→ ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←159° ↓
0	9. 53405	0 0	10. 46595	9. 56107	0 0	10. 43893	10. 02701	0 0	9. 97299
1	440	1 1	560	146	1 1	854	706	1 0	294
2	475	2 1	525	185	2 1	815	711	2 0	289
3	509	3 2	491	224	3 2	776	715	3 0	285
4	544	4 2	456	264	4 3	736	720	4 0	280
5	578	5 3	422	303	5 3	697	724	5 0	276
6	613	6 3	387	342	6 4	658	729	6 0	271
7	647	7 4	353	381	7 4	619	734	7 1	266
8	682	8 5	318	420	8 5	580	738	8 1	262
9	9. 53716	9 5	10. 46284	459	9 6	541	743	9 1	257
10	751	10 6	249	498	10 6	502	10. 02748	10 1	9. 97252
11	785	11 6	215	537	11 7	463	752	11 1	248
12	819	12 7	181	576	12 8	424	757	12 1	243
13	854	13 7	146	615	13 8	385	762	13 1	238
14	888	14 8	112	654	14 9	346	766	14 1	234
15	922	15 8	9. 56693	693	15 10	10. 43307	771	15 1	229
16	957	16 9	043	732	16 10	268	776	16 1	224
17	9. 53991	17 10	10. 46009	771	17 11	229	780	17 1	220
18	9. 54025	18 10	10. 45975	810	18 12	190	785	18 1	215
19	059	19 11	941	849	19 12	151	790	19 1	210
20	093	20 11	907	887	20 13	113	10. 02794	20 2	9. 97206
21	127	21 12	873	926	21 13	074	799	21 2	201
22	161	22 12	839	965	22 14	10. 43035	804	22 2	196
23	195	23 13	805	9. 57004	23 15	10. 42996	808	23 2	192
24	229	24 14	771	042	24 15	958	813	24 2	187
25	263	25 14	737	081	25 16	919	818	25 2	182
26	9. 54297	26 15	10. 45703	120	26 17	880	822	26 2	178
27	331	27 15	669	158	27 17	842	827	27 2	173
28	365	28 16	635	197	28 18	803	832	28 2	168
29	399	29 16	601	235	29 19	765	837	29 2	163
30	433	30 17	567	274	30 19	726	10. 02841	30 2	9. 97159
31	466	31 17	534	312	31 20	688	846	31 2	154
32	9. 54500	32 18	10. 45500	9. 57351	32 21	10. 42649	851	32 3	149
33	534	33 19	466	389	33 21	611	855	33 3	145
34	567	34 19	433	428	34 22	572	860	34 3	140
35	601	35 20	399	466	35 22	534	865	35 3	135
36	635	36 20	365	504	36 23	496	870	36 3	130
37	668	37 21	332	543	37 24	457	874	37 3	126
38	702	38 21	298	581	38 24	419	879	38 3	121
39	735	39 22	265	619	39 25	381	884	39 3	116
40	9. 54769	40 23	10. 45231	9. 57658	40 26	10. 42342	10. 02889	40 3	9. 97111
41	802	41 23	198	696	41 26	304	893	41 3	107
42	836	42 24	164	734	42 27	266	898	42 3	102
43	869	43 24	131	772	43 28	228	903	43 3	097
44	903	44 25	097	810	44 28	190	908	44 3	092
45	936	45 25	064	849	45 29	151	913	45 4	087
46	9. 54969	46 26	10. 45031	887	46 30	113	917	46 4	083
47	9. 55003	47 26	10. 44997	925	47 30	075	922	47 4	078
48	036	48 27	964	9. 57963	48 31	10. 42037	927	48 4	073
49	069	49 28	931	9. 58001	49 31	10. 41999	932	49 4	068
50	102	50 28	898	039	50 32	961	10. 02937	50 4	9. 97063
51	136	51 29	864	077	51 33	923	941	51 4	059
52	169	52 29	831	115	52 33	885	946	52 4	054
53	9. 55202	53 30	798	153	53 34	847	951	53 4	049
54	235	54 30	10. 44765	191	54 35	809	956	54 4	044
55	268	55 31	732	9. 58229	55 35	10. 41771	961	55 4	039
56	301	56 32	699	267	56 36	733	965	56 4	035
57	334	57 32	666	304	57 37	696	970	57 4	030
58	367	58 33	633	342	58 37	658	975	58 5	025
59	400	59 33	600	380	59 38	620	980	59 5	020
60	9. 55433	60 34	10. 44567	9. 58418	60 39	10. 41582	10. 02985	60 5	9. 97015
↑ 110°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←69° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

21°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←158°
↓									↓
0	9. 55433	0 0	10. 44567	9. 58418	0 0	10. 41582	10. 02985	0 0	9. 97015
1	466	1 1	534	455	1 1	545	990	1 0	010
2	499	2 1	501	493	2 1	507	995	2 0	005
3	532	3 2	468	531	3 2	469	10. 02999	3 0	9. 97001
4	564	4 2	436	569	4 2	431	10. 03004	4 0	9. 96996
5	597	5 3	403	606	5 3	394	009	5 0	991
6	630	6 3	370	644	6 4	356	014	6 0	986
7	663	7 4	337	681	7 4	319	019	7 1	981
8	695	8 4	305	9. 58719	8 5	10. 41281	024	8 1	976
9	9. 55728	9 5	10. 44272	757	9 6	243	029	9 1	971
10	761	10 5	239	794	10 6	206	034	10 1	966
11	793	11 6	207	832	11 7	168	038	11 1	962
12	826	12 6	174	869	12 7	131	043	12 1	957
13	858	13 7	142	907	13 8	093	10. 03048	13 1	9. 96952
14	891	14 7	109	944	14 9	056	053	14 1	947
15	923	15 8	077	9. 58981	15 9	10. 41019	058	15 1	942
16	956	16 9	044	9. 59019	16 10	10. 40981	063	16 1	937
17	9. 55988	17 9	10. 44012	056	17 10	944	068	17 1	932
18	9. 56021	18 10	10. 43979	094	18 11	906	073	18 1	927
19	053	19 10	947	131	19 12	869	078	19 2	922
20	085	20 11	915	168	20 12	832	083	20 2	917
21	118	21 11	882	205	21 13	795	088	21 2	912
22	150	22 12	850	243	22 14	757	10. 03093	22 2	9. 96907
23	182	23 12	818	280	23 14	720	097	23 2	903
24	215	24 13	785	317	24 15	683	102	24 2	898
25	247	25 13	753	9. 59354	25 15	10. 40646	107	25 2	893
26	279	26 14	721	391	26 16	609	112	26 2	888
27	311	27 14	689	429	27 17	571	117	27 2	883
28	9. 56343	28 15	10. 43657	466	28 17	534	122	28 2	878
29	375	29 16	625	503	29 18	497	127	29 2	873
30	408	30 16	592	540	30 19	460	132	30 2	868
31	440	31 17	560	577	31 19	423	10. 03137	31 3	9. 96863
32	472	32 17	528	614	32 20	386	142	32 3	858
33	504	33 18	496	9. 59651	33 20	10. 40349	147	33 3	853
34	536	34 18	464	688	34 21	312	152	34 3	848
35	568	35 19	432	725	35 22	275	157	35 3	843
36	599	36 19	401	762	36 22	238	162	36 3	838
37	631	37 20	369	799	37 23	201	167	37 3	833
38	9. 56663	38 20	10. 43337	835	38 23	165	172	38 3	828
39	695	39 21	305	872	39 24	128	177	39 3	823
40	727	40 21	273	909	40 25	091	10. 03182	40 3	9. 96818
41	759	41 22	241	946	41 25	054	187	41 3	813
42	790	42 22	210	9. 59983	42 26	10. 40017	192	42 3	808
43	822	43 23	178	9. 60019	43 27	10. 39981	197	43 4	803
44	854	44 24	146	056	44 27	944	202	44 4	798
45	886	45 24	114	093	45 28	907	207	45 4	793
46	917	46 25	083	130	46 28	870	212	46 4	788
47	949	47 25	051	166	47 29	834	217	47 4	783
48	9. 56980	48 26	10. 43020	203	48 30	797	222	48 4	778
49	9. 57012	49 26	10. 42988	240	49 30	760	228	49 4	772
50	044	50 27	956	276	50 31	724	10. 03233	50 4	9. 96767
51	075	51 27	925	9. 60313	51 31	10. 39687	238	51 4	762
52	107	52 28	893	349	52 32	651	243	52 4	757
53	138	53 28	862	386	53 33	614	248	53 4	752
54	169	54 29	831	422	54 33	578	253	54 4	747
55	201	55 29	799	459	55 34	541	258	55 5	742
56	232	56 30	768	495	56 35	505	263	56 5	737
57	264	57 30	736	532	57 35	468	268	57 5	732
58	295	58 31	705	568	58 36	432	273	58 5	727
59	326	59 32	674	605	59 36	395	278	59 5	722
60	9. 57358	60 32	10. 42642	9. 60641	60 37	10. 39359	10. 03283	60 5	9. 96717
↑111°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←68°
↑									↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

22°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←157°
↓									↓
0	9. 57358	0 0	10. 42642	9. 60641	0 0	10. 39359	10. 03283	0 0	9. 96717
1	389	1 1	611	677	1 1	323	289	1 0	711
2	420	2 1	580	714	2 1	286	294	2 0	706
3	451	3 2	549	750	3 2	250	299	3 0	701
4	482	4 2	518	786	4 2	214	304	4 0	696
5	514	5 3	486	823	5 3	177	309	5 0	691
6	545	6 3	455	859	6 4	141	314	6 1	686
7	576	7 4	424	895	7 4	105	319	7 1	681
8	607	8 4	393	931	8 5	069	324	8 1	676
9	638	9 5	362	9. 60967	9 5	10. 39033	330	9 1	670
10	9. 57669	10 5	10. 42331	9. 61004	10 6	10. 38996	10. 03335	10 1	9. 96665
11	700	11 6	300	040	11 7	960	340	11 1	660
12	731	12 6	269	076	12 7	924	345	12 1	655
13	762	13 7	238	112	13 8	888	350	13 1	650
14	793	14 7	207	148	14 8	852	355	14 1	645
15	824	15 8	176	184	15 9	816	360	15 1	640
16	855	16 8	145	220	16 10	780	366	16 1	634
17	885	17 9	115	9. 61256	17 10	10. 38744	371	17 1	629
18	916	18 9	084	292	18 11	708	376	18 2	624
19	947	19 10	053	328	19 11	672	381	19 2	619
20	9. 57978	20 10	10. 42022	364	20 12	636	10. 03386	20 2	9. 96614
21	9. 58008	21 11	10. 41992	400	21 13	600	392	21 2	608
22	039	22 11	961	436	22 13	564	397	22 2	603
23	070	23 12	930	472	23 14	528	402	23 2	598
24	101	24 12	899	9. 61508	24 14	10. 38492	407	24 2	593
25	131	25 13	869	544	25 15	456	412	25 2	588
26	162	26 13	838	579	26 15	421	418	26 2	582
27	192	27 14	808	615	27 16	385	423	27 2	577
28	223	28 14	777	651	28 17	349	428	28 2	572
29	9. 58253	29 15	10. 41747	687	29 17	313	433	29 3	567
30	284	30 15	716	722	30 18	278	10. 03438	30 3	9. 96562
31	314	31 16	686	9. 61758	31 18	10. 38242	444	31 3	556
32	345	32 16	655	794	32 19	206	449	32 3	551
33	375	33 17	625	830	33 20	170	454	33 3	546
34	406	34 17	594	865	34 20	135	459	34 3	541
35	436	35 18	564	901	35 21	099	465	35 3	535
36	467	36 18	533	936	36 21	064	470	36 3	530
37	9. 58497	37 19	10. 41503	9. 61972	37 22	10. 38028	475	37 3	525
38	527	38 19	473	9. 62008	38 23	10. 37992	480	38 3	520
39	557	39 20	443	043	39 23	957	486	39 3	514
40	588	40 20	412	079	40 24	921	10. 03491	40 3	9. 96509
41	618	41 21	382	114	41 24	886	496	41 4	504
42	648	42 21	352	150	42 25	850	502	42 4	498
43	678	43 22	322	185	43 26	815	507	43 4	493
44	709	44 22	291	221	44 26	779	512	44 4	488
45	9. 58739	45 23	10. 41261	9. 62256	45 27	10. 37744	517	45 4	483
46	769	46 23	231	292	46 27	708	523	46 4	477
47	799	47 24	201	327	47 28	673	528	47 4	472
48	829	48 24	171	362	48 29	638	533	48 4	467
49	859	49 25	141	398	49 29	602	539	49 4	461
50	889	50 25	111	433	50 30	567	10. 03544	50 4	9. 96456
51	919	51 26	081	468	51 30	532	549	51 4	451
52	949	52 26	051	9. 62504	52 31	10. 37496	555	52 5	445
53	9. 58979	53 27	10. 41021	539	53 32	461	560	53 5	440
54	9. 59009	54 27	10. 40991	574	54 32	426	565	54 5	435
55	039	55 28	961	609	55 33	391	571	55 5	429
56	069	56 28	931	645	56 33	355	576	56 5	424
57	098	57 29	902	680	57 34	320	581	57 5	419
58	128	58 29	872	715	58 35	285	587	58 5	413
59	158	59 30	842	750	59 35	250	592	59 5	408
60	9. 59188	60 31	10. 40812	9. 62785	60 36	10. 37215	10. 03597	60 5	9. 96403
↑	112°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←67°
↑									↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

23°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←156° ↓
0	9. 59188	0 0	10. 40812	9. 62785	0 0	10. 37215	10. 03597	0 0	9. 96403
1	218	1 0	782	820	1 1	180	603	1 0	397
2	247	2 1	753	855	2 1	145	608	2 0	392
3	277	3 1	723	890	3 2	110	613	3 0	387
4	307	4 2	693	926	4 2	074	619	4 0	381
5	336	5 2	664	961	5 3	039	624	5 0	376
6	366	6 3	634	9. 62996	6 3	10. 37004	630	6 1	370
7	396	7 3	604	9. 63031	7 4	10. 36969	635	7 1	365
8	425	8 4	575	066	8 5	934	640	8 1	360
9	9. 59455	9 4	10. 40545	101	9 5	899	646	9 1	354
10	484	10 5	516	135	10 6	865	10. 03651	10 1	9. 96349
11	514	11 5	486	170	11 6	830	657	11 1	343
12	543	12 6	457	205	12 7	795	662	12 1	338
13	573	13 6	427	240	13 7	760	667	13 1	333
14	602	14 7	398	275	14 8	725	673	14 1	327
15	632	15 7	368	310	15 9	690	678	15 1	322
16	661	16 8	339	9. 63345	16 9	10. 36655	684	16 1	316
17	690	17 8	310	379	17 10	621	689	17 2	311
18	9. 59720	18 9	10. 40280	414	18 10	586	695	18 2	305
19	749	19 9	251	449	19 11	551	700	19 2	300
20	778	20 10	222	484	20 12	516	10. 03706	20 2	9. 96294
21	808	21 10	192	519	21 12	481	711	21 2	289
22	837	22 11	163	553	22 13	447	716	22 2	284
23	866	23 11	134	588	23 13	412	722	23 2	278
24	895	24 12	105	623	24 14	377	727	24 2	273
25	924	25 12	076	9. 63657	25 14	10. 36343	733	25 2	267
26	954	26 13	046	692	26 15	308	738	26 2	262
27	9. 59983	27 13	10. 40017	726	27 16	274	744	27 2	256
28	9. 60012	28 14	10. 39988	761	28 16	239	749	28 3	251
29	041	29 14	959	796	29 17	204	755	29 3	245
30	070	30 15	930	830	30 17	170	10. 03760	30 3	9. 96240
31	099	31 15	901	865	31 18	135	766	31 3	234
32	128	32 15	872	899	32 18	101	771	32 3	229
33	157	33 16	843	934	33 19	066	777	33 3	223
34	186	34 16	814	9. 63968	34 20	10. 36032	782	34 3	218
35	215	35 17	785	9. 64003	35 20	10. 35997	788	35 3	212
36	244	36 17	756	037	36 21	963	793	36 3	207
37	273	37 18	727	072	37 21	928	799	37 3	201
38	302	38 18	698	106	38 22	894	804	38 3	196
39	9. 60331	39 19	10. 39669	140	39 22	860	810	39 4	190
40	359	40 19	641	175	40 23	825	10. 03815	40 4	9. 96185
41	388	41 20	612	209	41 24	791	821	41 4	179
42	417	42 20	583	243	42 24	757	826	42 4	174
43	446	43 21	554	9. 64278	43 25	10. 35722	832	43 4	168
44	474	44 21	526	312	44 25	688	838	44 4	162
45	503	45 22	497	346	45 26	654	843	45 4	157
46	532	46 22	468	381	46 26	619	849	46 4	151
47	561	47 23	439	415	47 27	585	854	47 4	146
48	589	48 23	411	449	48 28	551	860	48 4	140
49	9. 60618	49 24	10. 39382	483	49 28	517	865	49 4	135
50	646	50 24	354	517	50 29	483	10. 03871	50 5	9. 96129
51	675	51 25	325	9. 64552	51 29	10. 35448	877	51 5	123
52	704	52 25	296	586	52 30	414	882	52 5	118
53	732	53 26	268	620	53 31	380	888	53 5	112
54	761	54 26	239	654	54 31	346	893	54 5	107
55	789	55 27	211	688	55 32	312	899	55 5	101
56	818	56 27	182	722	56 32	278	905	56 5	095
57	846	57 28	154	756	57 33	244	910	57 5	090
58	875	58 28	125	790	58 33	210	916	58 5	084
59	903	59 29	097	824	59 34	176	921	59 5	079
60	9. 60931	60 29	10. 39069	9. 64858	60 35	10. 35142	10. 03927	60 6	9. 96073
↑ 113°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←66° ↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

24°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←155° ↓
0	9. 60931	0 0	10. 39069	9. 64858	0 0	10. 35142	10. 03927	0 0	9. 96073
1	960	1 0	040	892	1 1	108	933	1 0	067
2	9. 60988	2 1	10. 39012	926	2 1	074	938	2 0	062
3	9. 61016	3 1	10. 38984	960	3 2	040	944	3 0	056
4	045	4 2	955	9. 64994	4 2	10. 35006	950	4 0	050
5	073	5 2	927	9. 65028	5 3	10. 34972	955	5 0	045
6	101	6 3	899	062	6 3	938	10. 03961	6 1	9. 96039
7	129	7 3	871	096	7 4	904	966	7 1	034
8	158	8 4	842	130	8 4	870	972	8 1	028
9	186	9 4	814	164	9 5	836	978	9 1	022
10	214	10 5	786	197	10 6	803	983	10 1	017
11	242	11 5	758	231	11 6	769	989	11 1	011
12	9. 61270	12 6	10. 38730	265	12 7	735	10. 03995	12 1	005
13	298	13 6	702	299	13 7	701	10. 04000	13 1	9. 96000
14	326	14 6	674	9. 65333	14 8	10. 34667	006	14 1	9. 95994
15	354	15 7	646	366	15 8	634	012	15 1	988
16	382	16 7	618	400	16 9	600	018	16 2	982
17	411	17 8	589	434	17 9	566	023	17 2	977
18	438	18 8	562	467	18 10	533	029	18 2	971
19	466	19 9	534	501	19 11	499	035	19 2	965
20	494	20 9	506	535	20 11	465	040	20 2	960
21	9. 61522	21 10	10. 38478	568	21 12	432	046	21 2	954
22	550	22 10	450	602	22 12	398	10. 04052	22 2	9. 95948
23	578	23 11	422	636	23 13	364	058	23 2	942
24	606	24 11	394	9. 65669	24 13	10. 34331	063	24 2	937
25	634	25 12	366	703	25 14	297	069	25 2	931
26	662	26 12	338	736	26 15	264	075	26 2	925
27	689	27 12	311	770	27 15	230	080	27 3	920
28	717	28 13	283	803	28 16	197	086	28 3	914
29	9. 61745	29 13	10. 38255	837	29 16	163	092	29 3	908
30	773	30 14	227	870	30 17	130	098	30 3	902
31	800	31 14	200	904	31 17	096	10. 04103	31 3	9. 95897
32	828	32 15	172	937	32 18	063	109	32 3	891
33	856	33 15	144	9. 65971	33 18	10. 34029	115	33 3	885
34	883	34 16	117	9. 66004	34 19	10. 33996	121	34 3	879
35	911	35 16	089	038	35 20	962	127	35 3	873
36	939	36 17	061	071	36 20	929	132	36 3	868
37	966	37 17	034	104	37 21	896	138	37 4	862
38	9. 61994	38 18	10. 38006	138	38 21	862	144	38 4	856
39	9. 62021	39 18	10. 37979	171	39 22	829	150	39 4	850
40	049	40 18	951	204	40 22	796	10. 04156	40 4	9. 95844
41	076	41 19	924	238	41 23	762	161	41 4	839
42	104	42 19	896	271	42 23	729	167	42 4	833
43	131	43 20	869	9. 66304	43 24	10. 33696	173	43 4	827
44	159	44 20	841	337	44 25	663	179	44 4	821
45	186	45 21	814	371	45 25	629	185	45 4	815
46	214	46 21	786	404	46 26	596	190	46 4	810
47	241	47 22	759	437	47 26	563	196	47 5	804
48	268	48 22	732	470	48 27	530	202	48 5	798
49	296	49 23	704	503	49 27	497	208	49 5	792
50	9. 62323	50 23	10. 37677	537	50 28	463	10. 04214	50 5	9. 95786
51	350	51 24	650	570	51 28	430	220	51 5	780
52	377	52 24	623	9. 66603	52 29	10. 33397	225	52 5	775
53	405	53 24	595	636	53 30	364	231	53 5	769
54	432	54 25	568	669	54 30	331	237	54 5	763
55	459	55 25	541	702	55 31	298	243	55 5	757
56	486	56 26	514	735	56 31	265	249	56 5	751
57	513	57 26	487	768	57 32	232	255	57 5	745
58	541	58 27	459	801	58 32	199	261	58 6	739
59	568	59 27	432	834	59 33	166	267	59 6	733
60	9. 62595	60 28	10. 37405	9. 66867	60 33	10. 33133	10. 04272	60 6	9. 95728
↑ 114°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑ 65°

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Table X. Logarithms of Trigonometric Functions—Continued

25°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←154° ↓
0	9. 62595	0 0	10. 37405	9. 66867	0 0	10. 33133	10. 04272	0 0	9. 95728
1	622	1 0	378	900	1 1	100	278	1 0	722
2	649	2 1	351	933	2 1	067	284	2 0	716
3	676	3 1	324	966	3 2	034	290	3 0	710
4	703	4 2	297	9. 66999	4 2	10. 33001	296	4 0	704
5	730	5 2	270	9. 67032	5 3	10. 32968	302	5 1	698
6	757	6 3	243	065	6 3	935	308	6 1	692
7	9. 62784	7 3	10. 37216	098	7 4	902	314	7 1	686
8	811	8 4	189	131	8 4	869	320	8 1	680
9	838	9 4	162	163	9 5	837	326	9 1	674
10	865	10 4	135	196	10 5	804	10. 04332	10 1	9. 95668
11	892	11 5	108	229	11 6	771	337	11 1	663
12	918	12 5	082	262	12 7	738	343	12 1	657
13	945	13 6	055	295	13 7	705	349	13 1	651
14	972	14 6	028	327	14 8	673	355	14 1	645
15	9. 62999	15 7	10. 37001	9. 67360	15 8	10. 32640	361	15 2	639
16	9. 63026	16 7	10. 36974	393	16 9	607	367	16 2	633
17	052	17 8	948	426	17 9	574	373	17 2	627
18	079	18 8	921	458	18 10	542	379	18 2	621
19	106	19 8	894	491	19 10	509	385	19 2	615
20	133	20 9	867	524	20 11	476	10. 04391	20 2	9. 95609
21	159	21 9	841	556	21 11	444	397	21 2	603
22	186	22 10	814	589	22 12	411	403	22 2	597
23	213	23 10	787	622	23 12	378	409	23 2	591
24	239	24 11	761	654	24 13	346	415	24 2	585
25	9. 63266	25 11	10. 36734	9. 67687	25 14	10. 32313	421	25 3	579
26	292	26 11	708	719	26 14	281	427	26 3	573
27	319	27 12	681	752	27 15	248	433	27 3	567
28	345	28 12	655	785	28 15	215	439	28 3	561
29	372	29 13	628	817	29 16	183	445	29 3	555
30	398	30 13	602	850	30 16	150	10. 04451	30 3	9. 95549
31	425	31 14	575	882	31 17	118	457	31 3	543
32	451	32 14	549	915	32 17	085	463	32 3	537
33	478	33 15	522	947	33 18	053	469	33 3	531
34	9. 63504	34 15	10. 36496	9. 67980	34 18	10. 32020	475	34 3	525
35	531	35 15	469	9. 68012	35 19	10. 31988	481	35 4	519
36	557	36 16	443	044	36 20	956	487	36 4	513
37	583	37 16	417	077	37 20	923	493	37 4	507
38	610	38 17	390	109	38 21	891	500	38 4	500
39	636	39 17	364	142	39 21	858	506	39 4	494
40	662	40 18	338	9. 68174	40 22	826	10. 04512	40 4	9. 95488
41	689	41 18	311	206	41 22	794	518	41 4	482
42	715	42 19	285	239	42 23	761	524	42 4	476
43	9. 63741	43 19	10. 36259	271	43 23	729	530	43 4	470
44	767	44 19	233	9. 68303	44 24	10. 31697	536	44 4	464
45	794	45 20	206	336	45 24	664	542	45 5	458
46	820	46 20	180	368	46 25	632	548	46 5	452
47	846	47 21	154	400	47 25	600	554	47 5	446
48	872	48 21	128	432	48 26	568	560	48 5	440
49	898	49 22	102	465	49 27	535	566	49 5	434
50	924	50 22	076	497	50 27	503	10. 04573	50 5	9. 95427
51	950	51 23	050	529	51 28	471	579	51 5	421
52	9. 63976	52 23	10. 36024	9. 68561	52 28	10. 31439	585	52 5	415
53	9. 64002	53 23	10. 35998	593	53 29	407	591	53 5	409
54	028	54 24	972	626	54 29	374	597	54 5	403
55	054	55 24	946	658	55 30	342	603	55 6	397
56	080	56 25	920	690	56 30	310	609	56 6	391
57	106	57 25	894	722	57 31	278	616	57 6	384
58	132	58 26	868	754	58 31	246	622	58 6	378
59	158	59 26	842	786	59 32	214	628	59 6	372
60	9. 64184	60 26	10. 35816	9. 68818	60 33	10. 31182	10. 04634	60 6	9. 95366
↑ 115°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←64° ↑

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Table X. Logarithms of Trigonometric Functions—Continued

26°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←153° ↓
0	9. 64184	0 0	10. 35816	9. 68818	0 0	10. 31182	10. 04634	0 0	9. 95366
1	210	1 0	790	850	1 1	150	640	1 0	360
2	236	2 1	764	882	2 1	118	646	2 0	354
3	262	3 1	738	914	3 2	086	652	3 0	348
4	288	4 2	712	946	4 2	054	659	4 0	341
5	313	5 2	687	9. 68978	5 3	10. 31022	665	5 1	335
6	339	6 3	661	9. 69010	6 3	10. 30990	671	6 1	329
7	365	7 3	635	042	7 4	958	677	7 1	323
8	9. 64391	8 3	10. 35609	074	8 4	926	683	8 1	317
9	417	9 4	583	106	9 5	894	690	9 1	310
10	442	10 4	558	138	10 5	862	10. 04696	10 1	9. 95304
11	468	11 5	532	170	11 6	830	702	11 1	298
12	494	12 5	506	202	12 6	798	708	12 1	292
13	519	13 5	481	234	13 7	766	714	13 1	286
14	545	14 6	455	9. 69266	14 7	10. 30734	721	14 1	279
15	9. 64571	15 6	10. 35429	298	15 8	702	727	15 2	273
16	596	16 7	404	329	16 8	671	733	16 2	267
17	622	17 7	378	361	17 9	639	739	17 2	261
18	647	18 8	353	393	18 9	607	746	18 2	254
19	673	19 8	327	425	19 10	575	752	19 2	248
20	698	20 8	302	457	20 11	543	10. 04758	20 2	9. 95242
21	724	21 9	276	488	21 11	512	764	21 2	236
22	749	22 9	251	9. 69520	22 12	10. 30480	771	22 2	229
23	9. 64775	23 10	10. 35225	552	23 12	448	777	23 2	223
24	800	24 10	200	584	24 13	416	783	24 3	217
25	826	25 11	174	615	25 13	385	789	25 3	211
26	851	26 11	149	647	26 14	353	796	26 3	204
27	877	27 11	123	679	27 14	321	802	27 3	198
28	902	28 12	098	710	28 15	290	808	28 3	192
29	927	29 12	073	742	29 15	258	815	29 3	185
30	953	30 13	047	9. 69774	30 16	10. 30226	10. 04821	30 3	9. 95179
31	9. 64978	31 13	10. 35022	805	31 16	195	827	31 3	173
32	9. 65003	32 14	10. 34997	837	32 17	163	833	32 3	167
33	029	33 14	971	868	33 17	132	840	33 3	160
34	054	34 14	946	900	34 18	100	846	34 4	154
35	079	35 15	921	932	35 18	068	852	35 4	148
36	104	36 15	896	963	36 19	037	859	36 4	141
37	130	37 16	870	9. 69995	37 20	10. 30005	865	37 4	135
38	155	38 16	845	9. 70026	38 20	10. 29974	871	38 4	129
39	9. 65180	39 16	10. 34820	058	39 21	942	878	39 4	122
40	205	40 17	795	089	40 21	911	10. 04884	40 4	9. 95116
41	230	41 17	770	121	41 22	879	890	41 4	110
42	255	42 18	745	152	42 22	848	897	42 4	103
43	281	43 18	719	184	43 23	816	903	43 5	097
44	306	44 19	694	215	44 23	785	910	44 5	090
45	331	45 19	669	9. 70247	45 24	10. 29753	916	45 5	084
46	9. 65356	46 19	10. 34644	278	46 24	722	922	46 5	078
47	381	47 20	619	309	47 25	691	929	47 5	071
48	406	48 20	594	341	48 25	659	935	48 5	065
49	431	49 21	569	372	49 26	628	10. 04941	49 5	9. 95059
50	456	50 21	544	404	50 26	596	948	50 5	052
51	481	51 22	519	435	51 27	565	954	51 5	046
52	506	52 22	494	466	52 27	534	961	52 5	039
53	9. 65531	53 22	10. 34469	9. 70498	53 28	10. 29502	967	53 6	033
54	556	54 23	444	529	54 28	471	973	54 6	027
55	580	55 23	420	560	55 29	440	980	55 6	020
56	605	56 24	395	592	56 30	408	986	56 6	014
57	630	57 24	370	623	57 30	377	993	57 6	007
58	655	58 25	345	654	58 31	346	10. 04999	58 6	9. 95001
59	680	59 25	320	685	59 31	315	10. 05005	59 6	9. 94995
60	9. 65705	60 25	10. 34295	9. 70717	60 32	10. 29283	10. 05012	60 6	9. 94988
↑ 116°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←63° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

27°→ ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←152° ↓
0	9. 65705	0 0	10. 34295	9. 70717	0 0	10. 29283	10. 05012	0 0	9. 94988
1	729	1 0	271	748	1 1	252	018	1 0	982
2	754	2 1	246	779	2 1	221	025	2 0	975
3	779	3 1	221	810	3 2	190	031	3 0	969
4	804	4 2	196	841	4 2	159	038	4 0	962
5	9. 65828	5 2	172	873	5 3	127	044	5 1	956
6	853	6 2	147	904	6 3	096	051	6 1	949
7	878	7 3	122	935	7 4	065	057	7 1	943
8	902	8 3	098	966	8 4	034	064	8 1	936
9	927	9 4	073	9. 70997	9 5	10. 29003	070	9 1	930
10	952	10 4	048	9. 71028	10 5	10. 28972	10. 05077	10 1	9. 94923
11	9. 65976	11 4	10. 34024	059	11 6	941	083	11 1	917
12	9. 66001	12 5	10. 33999	090	12 6	910	089	12 1	911
13	025	13 5	975	121	13 7	879	096	13 1	904
14	050	14 6	950	153	14 7	847	102	14 2	898
15	075	15 6	925	184	15 8	816	109	15 2	891
16	099	16 6	901	215	16 8	785	115	16 2	885
17	124	17 7	876	246	17 9	754	122	17 2	878
18	148	18 7	852	277	18 9	723	129	18 2	871
19	173	19 8	827	308	19 10	692	135	19 2	865
20	197	20 8	803	9. 71339	20 10	10. 28661	10. 05142	20 2	9. 94858
21	221	21 8	779	370	21 11	630	148	21 2	852
22	9. 66246	22 9	10. 33754	401	22 11	599	155	22 2	845
23	270	23 9	730	431	23 12	569	161	23 3	839
24	295	24 10	705	462	24 12	538	168	24 3	832
25	319	25 10	681	493	25 13	507	174	25 3	826
26	343	26 11	657	524	26 13	476	181	26 3	819
27	368	27 11	632	555	27 14	445	187	27 3	813
28	392	28 11	608	586	28 14	414	194	28 3	806
29	416	29 12	584	617	29 15	383	201	29 3	799
30	441	30 12	559	9. 71648	30 15	10. 28352	10. 05207	30 3	9. 94793
31	465	31 13	535	679	31 16	321	214	31 3	786
32	9. 66489	32 13	10. 33511	709	32 16	291	220	32 4	780
33	513	33 13	487	740	33 17	260	227	33 4	773
34	537	34 14	463	771	34 17	229	233	34 4	767
35	562	35 14	438	802	35 18	198	240	35 4	760
36	586	36 15	414	833	36 19	167	247	36 4	753
37	610	37 15	390	863	37 19	137	253	37 4	747
38	634	38 15	366	894	38 20	106	260	38 4	740
39	658	39 16	342	925	39 20	075	266	39 4	734
40	682	40 16	318	955	40 21	045	10. 05273	40 4	9. 94727
41	706	41 17	294	9. 71986	41 21	10. 28014	280	41 4	720
42	9. 66731	42 17	10. 33269	9. 72017	42 22	10. 27983	286	42 5	714
43	755	43 17	245	048	43 22	952	293	43 5	707
44	779	44 18	221	078	44 23	922	300	44 5	700
45	803	45 18	197	109	45 23	891	306	45 5	694
46	827	46 19	173	140	46 24	860	313	46 5	687
47	851	47 19	149	170	47 24	830	320	47 5	680
48	875	48 19	125	201	48 25	799	326	48 5	674
49	899	49 20	101	231	49 25	769	333	49 5	667
50	922	50 20	078	262	50 26	738	10. 05340	50 5	9. 94660
51	946	51 21	054	9. 72293	51 26	10. 27707	346	51 6	654
52	970	52 21	030	323	52 27	677	353	52 6	647
53	9. 66994	53 21	10. 33006	354	53 27	646	360	53 6	640
54	9. 67018	54 22	10. 32982	384	54 28	616	366	54 6	634
55	042	55 22	958	415	55 28	585	373	55 6	627
56	066	56 23	934	445	56 29	555	380	56 6	620
57	090	57 23	910	476	57 29	524	386	57 6	614
58	113	58 23	887	506	58 30	494	393	58 6	607
59	137	59 24	863	537	59 30	463	400	59 6	600
60	9. 67161	60 24	10. 32839	9. 72567	60 31	10. 27433	10. 05407	60 7	9. 94593
↑ 117°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑ +62°

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Table X. Logarithms of Trigonometric Functions—Continued

28°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←151° ↓
0	9. 67161	0 0	10. 32839	9. 72567	0 0	10. 27433	10. 05407	0 0	9. 94593
1	185	1 0	815	598	1 1	402	413	1 0	587
2	208	2 1	792	628	2 1	372	420	2 0	580
3	232	3 1	768	659	3 2	341	427	3 0	573
4	256	4 2	744	689	4 2	311	433	4 0	567
5	280	5 2	720	720	5 3	280	440	5 1	560
6	303	6 2	697	750	6 3	250	447	6 1	553
7	9. 67327	7 3	10. 32673	9. 72780	7 4	10. 27220	454	7 1	546
8	350	8 3	650	811	8 4	189	460	8 1	540
9	374	9 3	626	841	9 5	159	467	9 1	533
10	398	10 4	602	872	10 5	128	10. 05474	10 1	9. 94526
11	421	11 4	579	902	11 6	098	481	11 1	519
12	445	12 5	555	932	12 6	068	487	12 1	513
13	468	13 5	532	963	13 7	037	494	13 1	506
14	9. 67492	14 5	10. 32508	9. 72993	14 7	10. 27007	501	14 2	499
15	515	15 6	485	9. 73023	15 8	10. 26977	508	15 2	492
16	539	16 6	461	054	16 8	946	515	16 2	485
17	562	17 7	438	084	17 9	916	521	17 2	479
18	586	18 7	414	114	18 9	886	528	18 2	472
19	609	19 7	391	144	19 10	856	535	19 2	465
20	633	20 8	367	175	20 10	825	10. 05542	20 2	9. 94458
21	9. 67656	21 8	10. 32344	205	21 11	795	549	21 2	451
22	680	22 9	320	235	22 11	765	555	22 3	445
23	703	23 9	297	9. 73265	23 12	10. 26735	562	23 3	438
24	726	24 9	274	295	24 12	705	569	24 3	431
25	750	25 10	250	326	25 13	674	576	25 3	424
26	773	26 10	227	356	26 13	644	583	26 3	417
27	796	27 10	204	386	27 14	614	590	27 3	410
28	9. 67820	28 11	10. 32180	416	28 14	584	596	28 3	404
29	843	29 11	157	446	29 15	554	603	29 3	397
30	866	30 12	134	476	30 15	524	10. 05610	30 3	9. 94390
31	890	31 12	110	507	31 16	493	617	31 4	383
32	913	32 12	087	9. 73537	32 16	10. 26463	624	32 4	376
33	936	33 13	064	567	33 17	433	631	33 4	369
34	959	34 13	041	597	34 17	403	638	34 4	362
35	9. 67982	35 14	10. 32018	627	35 18	373	645	35 4	355
36	9. 68006	36 14	10. 31994	657	36 18	343	651	36 4	349
37	029	37 14	971	687	37 19	313	658	37 4	342
38	052	38 15	948	717	38 19	283	665	38 4	335
39	075	39 15	925	747	39 20	253	672	39 4	328
40	098	40 16	902	9. 73777	40 20	10. 26223	10. 05679	40 5	9. 94321
41	121	41 16	879	807	41 21	193	686	41 5	314
42	144	42 16	856	837	42 21	163	693	42 5	307
43	167	43 17	833	867	43 22	133	700	43 5	300
44	9. 68190	44 17	10. 31810	897	44 22	103	707	44 5	293
45	213	45 17	787	927	45 23	073	714	45 5	286
46	237	46 18	763	957	46 23	043	721	46 5	279
47	260	47 18	740	9. 73987	47 24	10. 26013	727	47 5	273
48	283	48 19	717	9. 74017	48 24	10. 25983	734	48 5	266
49	305	49 19	695	047	49 25	953	741	49 6	259
50	328	50 19	672	077	50 25	923	10. 05748	50 6	9. 94252
51	351	51 20	649	107	51 26	893	755	51 6	245
52	9. 68374	52 20	10. 31626	137	52 26	863	762	52 6	238
53	397	53 21	603	166	53 27	834	769	53 6	231
54	420	54 21	580	196	54 27	10. 25804	776	54 6	224
55	443	55 21	557	9. 74226	55 28	774	783	55 6	217
56	466	56 22	534	256	56 28	744	790	56 6	210
57	489	57 22	511	286	57 29	714	797	57 7	203
58	512	58 22	488	316	58 29	684	804	58 7	196
59	534	59 23	466	345	59 30	655	811	59 7	189
60	9. 68557	60 23	10. 31443	9. 74375	60 30	10. 25625	10. 05818	60 7	9. 94182
↑ 118°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←61° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

29°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←150°	↓
0	9. 68557	0 0	10. 31443	9. 74375	0 0	10. 25625	10. 05818	0 0	9. 94182	60
1	580	1 0	420	405	1 0	595	825	1 0	175	59
2	603	2 1	397	435	2 1	565	832	2 0	168	58
3	625	3 1	375	465	3 1	535	839	3 0	161	57
4	648	4 1	352	494	4 2	506	846	4 0	154	56
5	671	5 2	329	524	5 2	476	853	5 1	147	55
6	694	6 2	306	554	6 3	446	860	6 1	140	54
7	716	7 3	284	583	7 3	417	867	7 1	133	53
8	739	8 3	261	613	8 4	387	10. 05874	8 1	9. 94126	52
9	762	9 3	238	643	9 4	357	881	9 1	119	51
10	9. 68784	10 4	10. 31216	9. 74673	10 5	10. 25327	888	10 1	112	50
11	807	11 4	193	702	11 5	298	895	11 1	105	49
12	829	12 4	171	732	12 6	268	902	12 1	098	48
13	852	13 5	148	762	13 6	238	910	13 2	090	47
14	875	14 5	125	791	14 7	209	917	14 2	083	46
15	897	15 6	103	821	15 7	179	924	15 2	076	45
16	920	16 6	080	851	16 8	149	10. 05931	16 2	9. 94069	44
17	942	17 6	058	880	17 8	120	938	17 2	062	43
18	965	18 7	035	910	18 9	090	945	18 2	055	42
19	9. 68987	19 7	10. 31013	939	19 9	061	952	19 2	048	41
20	9. 69010	20 7	10. 30990	969	20 10	031	959	20 2	041	40
21	032	21 8	968	9. 74998	21 10	10. 25002	966	21 3	034	39
22	055	22 8	945	9. 75028	22 11	10. 24972	973	22 3	027	38
23	077	23 9	923	058	23 11	942	980	23 3	020	37
24	100	24 9	900	087	24 12	913	988	24 3	012	36
25	122	25 9	878	117	25 12	883	10. 05995	25 3	9. 94005	35
26	144	26 10	856	146	26 13	854	10. 06002	26 3	9. 93998	34
27	167	27 10	833	176	27 13	824	009	27 3	991	33
28	189	28 10	811	205	28 14	795	016	28 3	984	32
29	212	29 11	788	235	29 14	765	023	29 3	977	31
30	9. 69234	30 11	10. 30766	9. 75264	30 15	10. 24736	030	30 4	970	30
31	256	31 12	744	294	31 15	706	037	31 4	963	29
32	279	32 12	721	323	32 16	677	045	32 4	955	28
33	301	33 12	699	353	33 16	647	052	33 4	948	27
34	323	34 13	677	382	34 17	618	059	34 4	941	26
35	345	35 13	655	411	35 17	589	10. 06066	35 4	9. 93934	25
36	368	36 13	632	441	36 18	559	073	36 4	927	24
37	390	37 14	610	470	37 18	530	080	37 4	920	23
38	412	38 14	588	9. 75500	38 19	10. 24500	088	38 5	912	22
39	434	39 15	566	529	39 19	471	095	39 5	905	21
40	9. 69456	40 15	10. 30544	558	40 20	442	102	40 5	898	20
41	479	41 15	521	588	41 20	412	109	41 5	891	19
42	501	42 16	499	617	42 21	383	116	42 5	884	18
43	523	43 16	477	647	43 21	353	10. 06124	43 5	9. 93876	17
44	545	44 16	455	676	44 22	324	131	44 5	869	16
45	567	45 17	433	705	45 22	295	138	45 5	862	15
46	589	46 17	411	9. 75735	46 23	10. 24265	145	46 5	855	14
47	611	47 17	389	764	47 23	236	153	47 6	847	13
48	633	48 18	367	793	48 24	207	160	48 6	840	12
49	655	49 18	345	822	49 24	178	167	49 6	833	11
50	9. 69677	50 19	10. 30323	852	50 25	148	174	50 6	826	10
51	699	51 19	301	881	51 25	119	10. 06181	51 6	9. 93819	9
52	721	52 19	279	910	52 26	090	189	52 6	811	8
53	743	53 20	257	939	53 26	061	196	53 6	804	7
54	765	54 20	235	969	54 27	031	203	54 6	797	6
55	787	55 20	213	9. 75998	55 27	10. 24002	211	55 7	789	5
56	809	56 21	191	9. 76027	56 28	10. 23973	218	56 7	782	4
57	831	57 21	169	056	57 28	944	225	57 7	775	3
58	853	58 22	147	086	58 29	914	232	58 7	768	2
59	875	59 22	125	115	59 29	885	240	59 7	760	1
60	9. 69897	60 22	10. 30103	9. 76144	60 29	10. 23856	10. 06247	60 7	9. 93753	0
↑	119°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin	↑ ←60°

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

30° ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←149° ↓
0	9. 69897	0 0	10. 30103	9. 76144	0 0	10. 23856	10. 06247	0 0	9. 93753
1	919	1 0	081	173	1 0	827	254	1 0	746
2	941	2 1	059	202	2 1	798	262	2 0	738
3	963	3 1	037	231	3 1	769	269	3 0	731
4	9. 69984	4 1	10. 30016	261	4 2	739	276	4 0	724
5	9. 70006	5 2	10. 29994	290	5 2	710	283	5 1	717
6	028	6 2	972	319	6 3	681	291	6 1	709
7	050	7 3	950	348	7 3	652	298	7 1	702
8	072	8 3	928	377	8 4	623	305	8 1	695
9	093	9 3	907	406	9 4	594	313	9 1	687
10	115	10 4	885	9. 76435	10 5	10. 23565	10. 06320	10 1	9. 93680
11	137	11 4	863	464	11 5	536	327	11 1	673
12	159	12 4	841	493	12 6	507	335	12 1	665
13	9. 70180	13 5	10. 29820	522	13 6	478	342	13 2	658
14	202	14 5	798	551	14 7	449	350	14 2	650
15	224	15 5	776	580	15 7	420	357	15 2	643
16	245	16 6	755	609	16 8	391	364	16 2	636
17	267	17 6	733	639	17 8	361	372	17 2	628
18	288	18 6	712	668	18 9	332	379	18 2	621
19	310	19 7	690	697	19 9	303	386	19 2	614
20	332	20 7	668	9. 76725	20 10	10. 23275	10. 06394	20 2	9. 93606
21	9. 70353	21 8	10. 29647	754	21 10	246	401	21 3	599
22	375	22 8	625	783	22 11	217	409	22 3	591
23	396	23 8	604	812	23 11	188	416	23 3	584
24	418	24 9	582	841	24 12	159	423	24 3	577
25	439	25 9	561	870	25 12	130	431	25 3	569
26	461	26 9	539	899	26 13	101	438	26 3	562
27	482	27 10	518	928	27 13	072	446	27 3	554
28	9. 70504	28 10	10. 29496	957	28 13	043	453	28 3	547
29	525	29 10	475	9. 76986	29 14	10. 23014	461	29 4	539
30	547	30 11	453	9. 77015	30 14	10. 22985	10. 06468	30 4	9. 93532
31	568	31 11	432	044	31 15	956	475	31 4	525
32	590	32 11	410	073	32 15	927	483	32 4	517
33	611	33 12	389	101	33 16	899	490	33 4	510
34	633	34 12	367	130	34 16	870	498	34 4	502
35	654	35 13	346	159	35 17	841	505	35 4	495
36	9. 70675	36 13	10. 29325	188	36 17	812	513	36 4	487
37	697	37 13	303	217	37 18	783	520	37 5	480
38	718	38 14	282	246	38 18	754	528	38 5	472
39	739	39 14	261	274	39 19	726	535	39 5	465
40	761	40 14	239	9. 77303	40 19	10. 22697	10. 06543	40 5	9. 93457
41	782	41 15	218	332	41 20	668	550	41 5	450
42	803	42 15	197	361	42 20	639	558	42 5	442
43	9. 70824	43 15	10. 29176	390	43 21	610	565	43 5	435
44	846	44 16	154	418	44 21	582	573	44 5	427
45	867	45 16	133	447	45 22	553	580	45 6	420
46	888	46 16	112	476	46 22	524	588	46 6	412
47	909	47 17	091	505	47 23	495	595	47 6	405
48	931	48 17	069	533	48 23	467	603	48 6	397
49	952	49 18	048	562	49 24	438	610	49 6	390
50	973	50 18	027	9. 77591	50 24	10. 22409	10. 06618	50 6	9. 93382
51	9. 70994	51 18	10. 29006	619	51 25	381	625	51 6	375
52	9. 71015	52 19	10. 28985	648	52 25	352	633	52 6	367
53	036	53 19	964	677	53 26	323	640	53 7	360
54	058	54 19	942	706	54 26	294	648	54 7	352
55	079	55 20	921	734	55 26	266	656	55 7	344
56	100	56 20	900	763	56 27	237	663	56 7	337
57	121	57 20	879	791	57 27	209	671	57 7	329
58	142	58 21	858	820	58 28	180	678	58 7	322
59	163	59 21	837	849	59 28	151	686	59 7	314
60	9. 71184	60 21	10. 28816	9. 77877	60 29	10. 22123	10. 06693	60 7	9. 93307
↑120°	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←59° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

31°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←148° ↓
0	9.71184	0 0	10.28816	9.77877	0 0	10.22123	10.06693	0 0	9.93307
1	205	1 0	795	906	1 0	094	701	1 0	299
2	226	2 1	774	935	2 1	065	709	2 0	291
3	247	3 1	753	963	3 1	037	716	3 0	284
4	268	4 1	732	9.77992	4 2	10.22008	724	4 1	276
5	289	5 2	711	9.78020	5 2	10.21980	731	5 1	269
6	310	6 2	690	049	6 3	951	739	6 1	261
7	331	7 2	669	077	7 3	923	747	7 1	253
8	352	8 3	648	106	8 4	894	754	8 1	246
9	373	9 3	627	135	9 4	865	762	9 1	238
10	9.71393	10 3	10.28607	163	10 5	837	10.06770	10 1	9.93230
11	414	11 4	586	192	11 5	808	777	11 1	223
12	435	12 4	565	220	12 6	780	785	12 2	215
13	456	13 4	544	249	13 6	751	793	13 2	207
14	477	14 5	523	9.78277	14 7	10.21723	800	14 2	200
15	498	15 5	502	306	15 7	694	808	15 2	192
16	519	16 5	481	334	16 8	666	816	16 2	184
17	539	17 6	461	363	17 8	637	823	17 2	177
18	560	18 6	440	391	18 9	609	831	18 2	169
19	581	19 7	419	419	19 9	581	839	19 2	161
20	9.71602	20 7	10.28398	448	20 9	552	10.06846	20 3	9.93154
21	622	21 7	378	476	21 10	524	854	21 3	146
22	643	22 8	357	9.78505	22 10	10.21495	862	22 3	138
23	664	23 8	336	533	23 11	467	869	23 3	131
24	685	24 8	315	562	24 11	438	877	24 3	123
25	705	25 9	295	590	25 12	410	885	25 3	115
26	726	26 9	274	618	26 12	382	892	26 3	108
27	747	27 9	253	647	27 13	353	900	27 3	100
28	767	28 10	233	675	28 13	325	908	28 4	092
29	788	29 10	212	704	29 14	296	916	29 4	084
30	9.71809	30 10	10.28191	9.78732	30 14	10.21268	10.06923	30 4	9.93077
31	829	31 11	171	760	31 15	240	931	31 4	069
32	850	32 11	150	789	32 15	211	939	32 4	061
33	870	33 11	130	817	33 16	183	947	33 4	053
34	891	34 12	109	845	34 16	155	954	34 4	046
35	911	35 12	089	874	35 17	126	962	35 5	038
36	932	36 12	068	902	36 17	098	970	36 5	030
37	952	37 13	048	930	37 17	070	978	37 5	022
38	973	38 13	027	959	38 18	041	986	38 5	014
39	9.71994	39 13	10.28006	9.78987	39 18	10.21013	10.06993	39 5	9.93007
40	9.72014	40 14	10.27986	9.79015	40 19	10.20985	10.07001	40 5	9.92999
41	034	41 14	966	043	41 19	957	009	41 5	991
42	055	42 14	945	072	42 20	928	017	42 5	983
43	075	43 15	925	100	43 20	900	024	43 6	976
44	096	44 15	904	128	44 21	872	032	44 6	968
45	116	45 15	884	156	45 21	844	040	45 6	960
46	137	46 16	863	185	46 22	815	048	46 6	952
47	157	47 16	843	213	47 22	787	056	47 6	944
48	177	48 16	823	241	48 23	759	064	48 6	936
49	198	49 17	802	269	49 23	731	071	49 6	929
50	9.72218	50 17	10.27782	9.79297	50 24	10.20703	10.07079	50 6	9.92921
51	238	51 18	762	326	51 24	674	087	51 7	913
52	259	52 18	741	354	52 25	646	095	52 7	905
53	279	53 18	721	382	53 25	618	103	53 7	897
54	299	54 19	701	410	54 26	590	111	54 7	889
55	320	55 19	680	438	55 26	562	119	55 7	881
56	340	56 19	660	466	56 26	534	126	56 7	874
57	360	57 20	640	495	57 27	505	134	57 7	866
58	381	58 20	619	523	58 27	477	142	58 7	858
59	401	59 20	599	551	59 28	449	150	59 8	850
60	9.72421	60 21	10.27579	9.79579	60 28	10.20421	10.07158	60 8	9.92842
↑121°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←58° ↑	

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

32°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←147° ↓
0	9. 72421	0 0	10. 27579	9. 79579	0 0	10. 20421	10. 07158	0 0	9. 92842
1	441	1 0	559	607	1 0	393	166	1 0	834
2	461	2 1	539	635	2 1	365	174	2 0	826
3	482	3 1	518	663	3 1	337	182	3 0	818
4	502	4 1	498	691	4 2	309	190	4 1	810
5	522	5 2	478	719	5 2	281	197	5 1	803
6	542	6 2	458	747	6 3	253	205	6 1	795
7	9. 72562	7 2	10. 27438	9. 79776	7 3	10. 20224	213	7 1	787
8	582	8 3	418	804	8 4	196	221	8 1	779
9	602	9 3	398	832	9 4	168	229	9 1	771
10	622	10 3	378	860	10 5	140	10. 07237	10 1	9. 92763
11	643	11 4	357	888	11 5	112	245	11 1	755
12	663	12 4	337	916	12 6	084	253	12 2	747
13	683	13 4	317	944	13 6	056	261	13 2	739
14	9. 72703	14 5	10. 27297	9. 79972	14 7	028	269	14 2	731
15	723	15 5	277	9. 80000	15 7	10. 20000	277	15 2	723
16	743	16 5	257	028	16 7	10. 19972	285	16 2	715
17	763	17 6	237	056	17 8	944	293	17 2	707
18	783	18 6	217	084	18 8	916	301	18 2	699
19	803	19 6	197	112	19 9	888	309	19 3	691
20	823	20 7	177	140	20 9	860	10. 07317	20 3	9. 92683
21	9. 72843	21 7	10. 27157	168	21 10	832	325	21 3	675
22	863	22 7	137	9. 80195	22 10	10. 19805	333	22 3	667
23	883	23 8	117	223	23 11	777	341	23 3	659
24	902	24 8	098	251	24 11	749	349	24 3	651
25	922	25 8	078	279	25 12	721	357	25 3	643
26	942	26 9	058	307	26 12	693	365	26 3	635
27	962	27 9	038	335	27 13	665	373	27 4	627
28	9. 72982	28 9	10. 27018	363	28 13	637	381	28 4	619
29	9. 73002	29 10	10. 26998	9. 80391	29 13	10. 19609	389	29 4	611
30	022	30 10	978	419	30 14	581	10. 07397	30 4	9. 92603
31	041	31 10	959	447	31 14	553	405	31 4	595
32	061	32 11	939	474	32 15	526	413	32 4	587
33	081	33 11	919	502	33 15	498	421	33 4	579
34	101	34 11	899	530	34 16	470	429	34 5	571
35	121	35 12	879	558	35 16	442	437	35 5	563
36	140	36 12	860	9. 80586	36 17	10. 19414	445	36 5	555
37	160	37 12	840	614	37 17	386	454	37 5	546
38	180	38 13	820	642	38 18	358	462	38 5	538
39	200	39 13	800	669	39 18	331	470	39 5	530
40	9. 73219	40 13	10. 26781	697	40 19	303	10. 07478	40 5	9. 92522
41	239	41 14	761	725	41 19	275	486	41 6	514
42	259	42 14	741	753	42 20	247	494	42 6	506
43	278	43 14	722	9. 80781	43 20	10. 19219	502	43 6	498
44	298	44 15	702	808	44 20	192	510	44 6	490
45	318	45 15	682	836	45 21	164	518	45 6	482
46	337	46 15	663	864	46 21	136	527	46 6	473
47	357	47 16	643	892	47 22	108	535	47 6	465
48	377	48 16	623	919	48 22	081	543	48 6	457
49	396	49 16	604	947	49 23	053	551	49 7	449
50	9. 73416	50 17	10. 26584	9. 80975	50 23	10. 19025	10. 07559	50 7	9. 92441
51	435	51 17	565	9. 81003	51 24	10. 18997	567	51 7	433
52	455	52 17	545	030	52 24	970	575	52 7	425
53	474	53 18	526	058	53 25	942	584	53 7	416
54	494	54 18	506	086	54 25	914	592	54 7	408
55	513	55 18	487	113	55 26	887	600	55 7	400
56	533	56 19	467	141	56 26	859	608	56 8	392
57	552	57 19	448	169	57 26	831	616	57 8	384
58	572	58 19	428	196	58 27	804	624	58 8	376
59	591	59 20	409	224	59 27	776	633	59 8	367
60	9. 73611	60 20	10. 26389	9. 81252	60 28	10. 18748	10. 07641	60 8	9. 92359
↑ 122°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ↑ 57°	

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

$33^{\circ} \rightarrow$ ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos $+146^{\circ}$ ↓
0	9. 73611	0 0	10. 26389	9. 81252	0 0	10. 18748	10. 07641	0 0	9. 92359
1	630	1 0	370	279	1 0	721	649	1 0	351
2	650	2 1	350	307	2 1	693	657	2 0	343
3	669	3 1	331	335	3 1	665	665	3 0	335
4	689	4 1	311	362	4 2	638	674	4 1	326
5	708	5 2	292	390	5 2	610	682	5 1	318
6	727	6 2	273	418	6 3	582	690	6 1	310
7	747	7 2	253	445	7 3	555	698	7 1	302
8	766	8 3	234	473	8 4	527	10. 07707	8 1	9. 92293
9	785	9 3	215	9. 81500	9 4	10. 18500	715	9 1	285
10	9. 73805	10 3	10. 26195	528	10 5	472	723	10 1	277
11	824	11 3	176	556	11 5	444	731	11 2	269
12	843	12 4	157	583	12 5	417	740	12 2	260
13	863	13 4	137	611	13 6	389	748	13 2	252
14	882	14 4	118	638	14 6	362	756	14 2	244
15	901	15 5	999	666	15 7	334	765	15 2	235
16	921	16 5	079	693	16 7	307	773	16 2	227
17	940	17 5	060	721	17 8	279	10. 07781	17 2	9. 92219
18	959	18 6	041	9. 81748	18 8	10. 18252	789	18 3	211
19	978	19 6	022	776	19 9	224	798	19 3	202
20	9. 73997	20 6	10. 26003	803	20 9	197	806	20 3	194
21	9. 74017	21 7	10. 25983	831	21 10	169	814	21 3	186
22	036	22 7	964	858	22 10	142	823	22 3	177
23	055	23 7	945	886	23 11	114	831	23 3	169
24	074	24 8	926	913	24 11	087	839	24 3	161
25	093	25 8	907	941	25 11	059	848	25 3	152
26	113	26 8	887	968	26 12	032	10. 07856	26 4	9. 92144
27	132	27 9	868	9. 81996	27 12	10. 18004	864	27 4	136
28	151	28 9	849	9. 82023	28 13	10. 17977	873	28 4	127
29	170	29 9	830	051	29 13	949	881	29 4	119
30	9. 74189	30 10	10. 25811	078	30 14	922	889	30 4	111
31	208	31 10	792	106	31 14	894	898	31 4	102
32	227	32 10	773	133	32 15	867	906	32 4	094
33	246	33 10	754	161	33 15	839	914	33 5	086
34	265	34 11	735	188	34 16	812	923	34 5	077
35	284	35 11	716	215	35 16	785	10. 07931	35 5	9. 92069
36	303	36 11	697	243	36 16	757	940	36 5	060
37	322	37 12	678	270	37 17	730	948	37 5	052
38	341	38 12	659	298	38 17	702	956	38 5	044
39	360	39 12	640	9. 82325	39 18	10. 17675	965	39 5	035
40	9. 74379	40 13	10. 25621	352	40 18	648	973	40 6	027
41	398	41 13	602	380	41 19	620	982	41 6	018
42	417	42 13	583	407	42 19	593	990	42 6	010
43	436	43 14	564	435	43 20	565	10. 07998	43 6	9. 92002
44	455	44 14	545	462	44 20	538	10. 08007	44 6	9. 91993
45	474	45 14	526	489	45 21	511	015	45 6	985
46	493	46 15	507	517	46 21	483	024	46 6	976
47	512	47 15	488	544	47 22	456	032	47 7	968
48	531	48 15	469	571	48 22	429	041	48 7	959
49	549	49 16	451	9. 82599	49 22	10. 17401	049	49 7	951
50	9. 74568	50 16	10. 25432	626	50 23	374	058	50 7	942
51	587	51 16	603	653	51 23	347	066	51 7	934
52	606	52 17	584	681	52 24	319	10. 08075	52 7	9. 91925
53	625	53 17	565	708	53 24	292	083	53 7	917
54	644	54 17	546	735	54 25	265	092	54 8	908
55	662	55 17	527	762	55 25	238	100	55 8	900
56	681	56 18	508	790	56 26	210	109	56 8	891
57	700	57 18	489	817	57 26	183	117	57 8	883
58	719	58 18	470	844	58 27	156	126	58 8	874
59	737	59 19	451	871	59 27	129	134	59 8	866
60	9. 74756	60 19	10. 25244	9. 82899	60 27	10. 17101	10. 08143	60 8	9. 91857
$123^{\circ} \rightarrow$ ↑	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin $+56^{\circ}$ ↑

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Table X. Logarithms of Trigonometric Functions—Continued

34°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←145° ↓
0	9. 74756	0 0	10. 25244	9. 82899	0 0	10. 17101	10. 08143	0 0	9. 91857
1	775	1 0	225	926	1 0	074	151	1 0	849
2	794	2 1	206	953	2 1	047	160	2 0	840
3	812	3 1	188	9. 82980	3 1	10. 17020	168	3 0	832
4	831	4 1	169	9. 83008	4 2	10. 16992	177	4 1	823
5	850	5 2	150	035	5 2	965	185	5 1	815
6	9. 74868	6 2	10. 25132	062	6 3	938	194	6 1	806
7	887	7 2	113	089	7 3	911	202	7 1	798
8	906	8 2	094	117	8 4	883	211	8 1	789
9	924	9 3	076	144	9 4	856	219	9 1	781
10	943	10 3	057	171	10 5	829	10. 08228	10 1	9. 91772
11	961	11 3	039	9. 83198	11 5	10. 16802	237	11 2	763
12	980	12 4	020	225	12 5	775	245	12 2	755
13	9. 74999	13 4	10. 25001	252	13 6	748	254	13 2	746
14	9. 75017	14 4	10. 24983	280	14 6	720	262	14 2	738
15	036	15 5	964	307	15 7	693	271	15 2	729
16	054	16 5	946	334	16 7	666	280	16 2	720
17	073	17 5	927	361	17 8	639	288	17 2	712
18	091	18 6	909	9. 83388	18 8	10. 16612	297	18 3	703
19	110	19 6	890	415	19 9	585	305	19 3	695
20	128	20 6	872	442	20 9	558	10. 08314	20 3	9. 91686
21	147	21 6	853	470	21 9	530	323	21 3	677
22	9. 75165	22 7	10. 24835	497	22 10	503	331	22 3	669
23	184	23 7	816	524	23 10	476	340	23 3	660
24	202	24 7	798	551	24 11	449	349	24 3	651
25	221	25 8	779	578	25 11	422	357	25 4	643
26	239	26 8	761	9. 83605	26 12	10. 16395	366	26 4	634
27	258	27 8	742	632	27 12	368	375	27 4	625
28	276	28 9	724	659	28 13	341	383	28 4	617
29	294	29 9	706	686	29 13	314	392	29 4	608
30	9. 75313	30 9	10. 24687	713	30 14	287	10. 08401	30 4	9. 91599
31	331	31 9	669	740	31 14	260	409	31 4	591
32	350	32 10	650	768	32 14	232	418	32 5	582
33	368	33 10	632	9. 83795	33 15	10. 16205	427	33 5	573
34	386	34 10	614	822	34 15	178	435	34 5	565
35	405	35 11	595	849	35 16	151	444	35 5	556
36	423	36 11	577	876	36 16	124	453	36 5	547
37	9. 75441	37 11	10. 24559	903	37 17	097	462	37 5	538
38	459	38 12	541	930	38 17	070	470	38 5	530
39	478	39 12	522	957	39 18	043	479	39 6	521
40	496	40 12	504	9. 83984	40 18	10. 16016	10. 08488	40 6	9. 91512
41	514	41 13	486	9. 84011	41 18	10. 15989	496	41 6	504
42	533	42 13	467	038	42 19	962	505	42 6	495
43	551	43 13	449	065	43 19	935	514	43 6	486
44	9. 75569	44 13	10. 24431	092	44 20	908	523	44 6	477
45	587	45 14	413	119	45 20	881	531	45 7	469
46	605	46 14	395	146	46 21	854	540	46 7	460
47	624	47 14	376	173	47 21	827	549	47 7	451
48	642	48 15	358	200	48 22	800	558	48 7	442
49	660	49 15	340	227	49 22	773	567	49 7	433
50	678	50 15	322	9. 84254	50 23	10. 15746	10. 08575	50 7	9. 91425
51	696	51 16	304	280	51 23	720	584	51 7	416
52	9. 75714	52 16	10. 24286	307	52 23	693	593	52 8	407
53	733	53 16	267	334	53 24	666	602	53 8	398
54	751	54 17	249	361	54 24	639	611	54 8	389
55	769	55 17	231	388	55 25	612	619	55 8	381
56	787	56 17	213	415	56 25	585	628	56 8	372
57	805	57 17	195	442	57 26	558	637	57 8	363
58	823	58 18	177	469	58 26	531	646	58 8	354
59	841	59 18	159	496	59 27	504	655	59 9	345
60	9. 75859	60 18	10. 24141	9. 84523	60 27	10. 15477	10. 08664	60 9	9. 91336
↑ 124°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←55° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

35°→ ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←144° ↓
0	9. 75859	0 0	10. 24141	9. 84523	0 0	10. 15477	10. 08664	0 0	9. 91336
1	877	1 0	123	550	1 0	450	672	1 0	328
2	895	2 1	105	576	2 1	424	681	2 0	319
3	913	3 1	087	603	3 1	397	690	3 0	310
4	931	4 1	069	630	4 2	370	699	4 1	301
5	949	5 1	051	657	5 2	343	708	5 1	292
6	967	6 2	033	9. 84684	6 3	10. 15316	717	6 1	283
7	9. 75985	7 2	10. 24015	711	7 3	289	726	7 1	274
8	9. 76003	8 2	10. 23997	738	8 4	262	10. 08734	8 1	9. 91266
9	021	9 3	979	764	9 4	236	743	9 1	257
10	039	10 3	961	791	10 4	209	752	10 2	248
11	057	11 3	943	9. 84818	11 5	10. 15182	761	11 2	239
12	075	12 4	925	845	12 5	155	770	12 2	230
13	093	13 4	907	872	13 6	128	779	13 2	221
14	111	14 4	889	899	14 6	101	788	14 2	212
15	129	15 4	871	925	15 7	075	10. 08797	15 2	9. 91203
16	146	16 5	854	952	16 7	048	806	16 2	194
17	164	17 5	836	9. 84979	17 8	10. 15021	815	17 3	185
18	182	18 5	818	9. 85006	18 8	10. 14994	824	18 3	176
19	9. 76200	19 6	10. 23800	033	19 8	967	833	19 3	167
20	218	20 6	782	059	20 9	941	842	20 3	158
21	236	21 6	764	086	21 9	914	851	21 3	149
22	253	22 6	747	113	22 10	887	10. 08859	22 3	9. 91141
23	271	23 7	729	140	23 10	860	868	23 3	132
24	289	24 7	711	166	24 11	834	877	24 4	123
25	307	25 7	693	193	25 11	807	886	25 4	114
26	324	26 8	676	9. 85220	26 12	10. 14780	895	26 4	105
27	342	27 8	658	247	27 12	753	904	27 4	096
28	360	28 8	640	273	28 12	727	913	28 4	087
29	378	29 9	622	300	29 13	700	10. 08922	29 4	9. 91078
30	9. 76395	30 9	10. 23605	327	30 13	673	931	30 5	069
31	413	31 9	587	354	31 14	646	940	31 5	060
32	431	32 9	569	380	32 14	620	949	32 5	051
33	448	33 10	552	9. 85407	33 15	10. 14593	958	33 5	042
34	466	34 10	534	434	34 15	566	967	34 5	033
35	484	35 10	516	460	35 16	540	977	35 5	023
36	501	36 11	499	487	36 16	513	986	36 5	014
37	519	37 11	481	514	37 16	486	10. 08995	37 6	9. 91005
38	537	38 11	463	540	38 17	460	10. 09004	38 6	9. 90996
39	554	39 12	446	567	39 17	433	013	39 6	987
40	9. 76572	40 12	10. 23428	594	40 18	406	022	40 6	978
41	590	41 12	410	9. 85620	41 18	10. 14380	031	41 6	969
42	607	42 12	393	647	42 19	353	040	42 6	960
43	625	43 13	375	674	43 19	326	049	43 6	951
44	642	44 13	358	700	44 20	300	058	44 7	942
45	660	45 13	340	727	45 20	273	10. 09067	45 7	9. 90933
46	677	46 14	323	754	46 20	246	076	46 7	924
47	695	47 14	305	780	47 21	220	085	47 7	915
48	712	48 14	288	9. 85807	48 21	10. 14193	094	48 7	906
49	730	49 14	270	834	49 22	166	104	49 7	896
50	9. 76747	50 15	10. 23253	860	50 22	140	113	50 8	887
51	765	51 15	235	887	51 23	113	122	51 8	878
52	782	52 15	218	913	52 23	087	131	52 8	869
53	800	53 16	200	940	53 24	060	10. 09140	53 8	9. 90860
54	817	54 16	183	967	54 24	033	149	54 8	851
55	835	55 16	165	9. 85993	55 24	10. 14007	158	55 8	842
56	852	56 17	148	9. 86020	56 25	10. 13980	168	56 8	832
57	870	57 17	130	046	57 25	954	177	57 9	823
58	887	58 17	113	073	58 26	927	186	58 9	814
59	904	59 17	096	100	59 26	900	195	59 9	805
60	9. 76922	60 18	10. 23078	9. 86126	60 27	10. 13874	10. 09204	60 9	9. 90796
↑ 125°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←54° ↑

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Table X. Logarithms of Trigonometric Functions—Continued

36°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←143° ↓
0	9. 76922	0 0	10. 23078	9. 86126	0 0	10. 13874	10. 09204	0 0	9. 90796
1	939	1 0	061	153	1 0	847	213	1 0	787
2	957	2 1	043	179	2 1	821	223	2 0	777
3	974	3 1	026	206	3 1	794	232	3 0	768
4	9. 76991	4 1	10. 23009	232	4 2	768	241	4 1	759
5	9. 77009	5 1	10. 22991	259	5 2	741	250	5 1	750
6	026	6 2	974	285	6 3	715	259	6 1	741
7	043	7 2	957	312	7 3	688	269	7 1	731
8	061	8 2	939	338	8 4	662	278	8 1	722
9	078	9 3	922	365	9 4	635	287	9 1	713
10	095	10 3	905	392	10 4	608	10. 09296	10 2	9. 90704
11	112	11 3	888	9. 86418	11 5	10. 13582	306	11 2	694
12	130	12 3	870	445	12 5	555	315	12 2	685
13	147	13 4	853	471	13 6	529	324	13 2	676
14	9. 77164	14 4	10. 22836	498	14 6	502	333	14 2	667
15	181	15 4	819	524	15 7	476	343	15 2	657
16	199	16 5	801	551	16 7	449	352	16 2	648
17	216	17 5	784	577	17 7	423	361	17 3	639
18	233	18 5	767	603	18 8	397	370	18 3	630
19	250	19 5	750	630	19 8	370	380	19 3	620
20	268	20 6	732	656	20 9	344	10. 09389	20 3	9. 90611
21	285	21 6	715	9. 86683	21 9	317	398	21 3	602
22	302	22 6	698	709	22 10	10. 13291	408	22 3	592
23	9. 77319	23 7	10. 22681	736	23 10	264	417	23 4	583
24	336	24 7	664	762	24 11	238	426	24 4	574
25	353	25 7	647	789	25 11	211	435	25 4	565
26	370	26 7	630	815	26 11	185	445	26 4	555
27	387	27 8	613	842	27 12	158	454	27 4	546
28	405	28 8	595	868	28 12	132	463	28 4	537
29	422	29 8	578	894	29 13	106	473	29 5	527
30	439	30 9	561	921	30 13	079	10. 09482	30 5	9. 90518
31	456	31 9	544	947	31 14	053	491	31 5	509
32	473	32 9	527	9. 86974	32 14	026	501	32 5	499
33	9. 77490	33 9	10. 22510	9. 87000	33 15	10. 13000	510	33 5	490
34	507	34 10	493	027	34 15	10. 12973	520	34 5	480
35	524	35 10	476	053	35 15	947	529	35 5	471
36	541	36 10	459	079	36 16	921	538	36 6	462
37	558	37 11	442	106	37 16	894	548	37 6	452
38	575	38 11	425	132	38 17	868	557	38 6	443
39	592	39 11	408	158	39 17	842	566	39 6	434
40	609	40 11	391	185	40 18	815	10. 09576	40 6	9. 90424
41	626	41 12	374	211	41 18	789	585	41 6	415
42	9. 77643	42 12	10. 22357	9. 87238	42 18	762	595	42 7	405
43	660	43 12	340	264	43 19	10. 12736	604	43 7	396
44	677	44 13	323	290	44 19	710	614	44 7	386
45	694	45 13	306	317	45 20	683	623	45 7	377
46	711	46 13	289	343	46 20	657	632	46 7	368
47	728	47 13	272	369	47 21	631	642	47 7	358
48	744	48 14	256	396	48 21	604	651	48 7	349
49	761	49 14	239	422	49 22	578	661	49 8	339
50	778	50 14	222	448	50 22	552	10. 09670	50 8	9. 90330
51	9. 77795	51 15	10. 22205	9. 87475	51 22	10. 12525	680	51 8	320
52	812	52 15	188	501	52 23	499	689	52 8	311
53	829	53 15	171	527	53 23	473	699	53 8	301
54	846	54 15	154	554	54 24	446	708	54 8	292
55	862	55 16	138	580	55 24	420	718	55 9	282
56	879	56 16	121	606	56 25	394	727	56 9	273
57	896	57 16	104	633	57 25	367	737	57 9	263
58	913	58 16	087	659	58 26	341	746	58 9	254
59	930	59 17	070	685	59 26	315	756	59 9	244
60	9. 77946	60 17	10. 22054	9. 87711	60 26	10. 12289	10. 09765	60 9	9. 90235
↑ 126°→ cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←53° ↑	

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

37°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←142°
↓									↓
0	9. 77946	0 0	10. 22054	9. 87711	0 0	10. 12289	10. 09765	0 0	9. 90235
1	963	1 0	037	738	1 0	262	775	1 0	225
2	980	2 1	020	764	2 1	236	784	2 0	216
3	9. 77997	3 1	10. 22003	790	3 1	210	794	3 0	206
4	9. 78013	4 1	10. 21987	817	4 2	183	803	4 1	197
5	030	5 1	970	843	5 2	157	813	5 1	187
6	047	6 2	953	869	6 3	131	822	6 1	178
7	063	7 2	937	895	7 3	105	832	7 1	168
8	080	8 2	920	922	8 3	078	10. 09841	8 1	9. 90159
9	097	9 2	903	948	9 4	052	851	9 1	149
10	113	10 3	887	9. 87974	10 4	026	861	10 2	139
11	130	11 3	870	9. 88000	11 5	10. 12000	870	11 2	130
12	9. 78147	12 3	10. 21853	027	12 5	10. 11973	880	12 2	120
13	163	13 4	837	053	13 6	947	889	13 2	111
14	180	14 4	820	079	14 6	921	899	14 2	101
15	197	15 4	803	105	15 7	895	909	15 2	091
16	213	16 4	787	131	16 7	869	10. 09918	16 3	9. 90082
17	230	17 5	770	158	17 7	842	928	17 3	072
18	246	18 5	754	184	18 8	816	937	18 3	063
19	263	19 5	737	210	19 8	790	947	19 3	053
20	9. 78280	20 5	10. 21720	236	20 9	764	957	20 3	043
21	296	21 6	704	9. 88262	21 9	10. 11738	966	21 3	034
22	313	22 6	687	289	22 10	711	976	22 4	024
23	329	23 6	671	315	23 10	685	986	23 4	014
24	346	24 7	654	341	24 10	659	10. 09995	24 4	9. 90005
25	362	25 7	638	367	25 11	633	10. 10005	25 4	9. 89995
26	379	26 7	621	393	26 11	607	015	26 4	985
27	395	27 7	605	420	27 12	580	024	27 4	976
28	9. 78412	28 8	10. 21588	446	28 12	554	034	28 5	966
29	428	29 8	572	472	29 13	528	044	29 5	956
30	445	30 8	555	9. 88498	30 13	10. 11502	053	30 5	947
31	461	31 9	539	524	31 14	476	063	31 5	937
32	478	32 9	522	550	32 14	450	10. 10073	32 5	9. 89927
33	494	33 9	506	577	33 14	423	082	33 5	918
34	510	34 9	490	603	34 15	397	092	34 5	908
35	527	35 10	473	629	35 15	371	102	35 6	898
36	9. 78543	36 10	10. 21457	655	36 16	345	112	36 6	888
37	560	37 10	440	681	37 16	319	121	37 6	879
38	576	38 10	424	707	38 17	293	131	38 6	869
39	592	39 11	408	733	39 17	267	10. 10141	39 6	9. 89859
40	609	40 11	391	9. 88759	40 17	10. 11241	151	40 6	849
41	625	41 11	375	786	41 18	214	160	41 7	840
42	642	42 12	358	812	42 18	188	170	42 7	830
43	658	43 12	342	838	43 19	162	180	43 7	820
44	9. 78674	44 12	10. 21326	864	44 19	136	190	44 7	810
45	691	45 12	309	890	45 20	110	199	45 7	801
46	707	46 13	293	916	46 20	084	10. 10209	46 7	9. 89791
47	723	47 13	277	942	47 20	058	219	47 8	781
48	739	48 13	261	968	48 21	032	229	48 8	771
49	756	49 13	244	9. 88994	49 21	10. 11006	239	49 8	761
50	772	50 14	228	9. 89020	50 22	10. 10980	248	50 8	752
51	788	51 14	212	046	51 22	954	258	51 8	742
52	9. 78805	52 14	10. 21195	073	52 23	927	268	52 8	732
53	821	53 15	179	099	53 23	901	10. 10278	53 9	9. 89722
54	837	54 15	163	125	54 24	875	288	54 9	712
55	853	55 15	147	151	55 24	849	298	55 9	702
56	869	56 15	131	177	56 24	823	307	56 9	693
57	886	57 16	114	203	57 25	797	317	57 9	683
58	902	58 16	098	229	58 25	771	327	58 9	673
59	918	59 16	082	255	59 26	745	337	59 10	663
60	9. 78934	60 16	10. 21066	9. 89281	60 26	10. 10719	10. 10347	60 10	9. 89653
↑									↑
127°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←52°

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

38° ↓	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos +141° ↓
0	9. 78934	0 0	10. 21066	9. 89281	0 0	10. 10719	10. 10347	0 0	9. 89653
1	950	1 0	050	307	1 0	693	357	1 0	643
2	967	2 1	033	333	2 1	667	367	2 0	633
3	983	3 1	017	359	3 1	641	376	3 1	624
4	9. 78999	4 1	10. 21001	385	4 2	615	386	4 1	614
5	9. 79015	5 1	10. 20985	411	5 2	589	396	5 1	604
6	031	6 2	969	437	6 3	563	406	6 1	594
7	047	7 2	953	9. 89463	7 3	10. 10537	416	7 1	584
8	063	8 2	937	489	8 3	511	426	8 1	574
9	079	9 2	921	515	9 4	485	436	9 2	564
10	095	10 3	905	541	10 4	459	10. 10446	10 2	9. 89554
11	111	11 3	889	567	11 5	433	456	11 2	544
12	128	12 3	872	593	12 5	407	466	12 2	534
13	9. 79144	13 3	10. 20856	619	13 6	381	476	13 2	524
14	160	14 4	840	9. 89645	14 6	10. 10355	486	14 2	514
15	176	15 4	824	671	15 6	329	496	15 3	504
16	192	16 4	808	697	16 7	303	505	16 3	495
17	208	17 5	792	723	17 7	277	515	17 3	485
18	224	18 5	776	749	18 8	251	525	18 3	475
19	240	19 5	760	775	19 8	225	535	19 3	465
20	256	20 5	744	801	20 9	199	10. 10545	20 3	9. 89455
21	9. 79272	21 6	10. 20728	9. 89827	21 9	10. 10173	555	21 4	445
22	288	22 6	712	853	22 10	147	565	22 4	435
23	304	23 6	696	879	23 10	121	575	23 4	425
24	319	24 6	681	905	24 10	095	585	24 4	415
25	335	25 7	665	931	25 11	069	595	25 4	405
26	351	26 7	649	957	26 11	043	605	26 4	395
27	367	27 7	633	9. 89983	27 12	10. 10017	615	27 5	385
28	383	28 7	617	9. 90009	28 12	10. 09991	625	28 5	375
29	9. 79399	29 8	10. 20601	035	29 13	965	636	29 5	364
30	415	30 8	585	061	30 13	939	10. 10646	30 5	9. 89354
31	431	31 8	569	086	31 13	914	656	31 5	344
32	447	32 8	553	112	32 14	888	666	32 5	334
33	463	33 9	537	138	33 14	862	676	33 6	324
34	478	34 9	522	164	34 15	836	686	34 6	314
35	494	35 9	506	190	35 15	810	696	35 6	304
36	9. 79510	36 10	10. 20490	9. 90216	36 16	10. 09784	706	36 6	294
37	526	37 10	474	242	37 16	758	716	37 6	284
38	542	38 10	458	268	38 16	732	726	38 6	274
39	558	39 10	442	294	39 17	706	736	39 7	264
40	573	40 11	427	320	40 17	680	10. 10746	40 7	9. 89254
41	589	41 11	411	346	41 18	654	756	41 7	244
42	605	42 11	395	371	42 18	629	767	42 7	233
43	621	43 11	379	397	43 19	603	777	43 7	223
44	9. 79636	44 12	10. 20364	9. 90423	44 19	10. 09577	787	44 7	213
45	652	45 12	348	449	45 19	551	797	45 8	203
46	668	46 12	332	475	46 20	525	807	46 8	193
47	684	47 12	316	501	47 20	499	817	47 8	183
48	699	48 13	301	527	48 21	473	827	48 8	173
49	715	49 13	285	553	49 21	447	838	49 8	162
50	731	50 13	269	578	50 22	422	10. 10848	50 8	9. 89152
51	746	51 14	254	604	51 22	396	858	51 9	142
52	9. 79762	52 14	10. 20238	630	52 22	370	868	52 9	132
53	778	53 14	222	9. 90656	53 23	10. 09344	878	53 9	122
54	793	54 14	207	682	54 23	318	888	54 9	112
55	809	55 15	191	708	55 24	292	899	55 9	101
56	825	56 15	175	734	56 24	266	909	56 9	091
57	840	57 15	160	759	57 25	241	919	57 10	081
58	856	58 15	144	785	58 25	215	929	58 10	071
59	872	59 16	128	811	59 26	189	940	59 10	060
60	9. 79887	60 16	10. 20113	9. 90837	60 26	10. 09163	10. 10950	60 10	9. 89050
↑ 128°	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin +51° ↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

39°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←140° ↓
0	9.79887	0 0	10.20113	9.90837	0 0	10.09163	10.10950	0 0	9.89050
1	903	1 0	097	863	1 0	137	960	1 0	040
2	918	2 1	082	889	2 1	111	970	2 0	030
3	934	3 1	066	914	3 1	086	980	3 1	020
4	950	4 1	050	940	4 2	060	10.10991	4 1	9.89009
5	965	5 1	035	966	5 2	034	10.11001	5 1	9.88999
6	981	6 2	019	9.90992	6 3	10.09008	011	6 1	989
7	9.79996	7 2	10.20004	9.91018	7 3	10.08982	022	7 1	978
8	9.80012	8 2	10.19988	043	8 3	957	032	8 1	968
9	027	9 2	973	069	9 4	931	042	9 2	958
10	043	10 3	957	095	10 4	905	052	10 2	948
11	058	11 3	942	121	11 5	879	063	11 2	937
12	074	12 3	926	147	12 5	853	073	12 2	927
13	089	13 3	911	172	13 6	828	083	13 2	917
14	105	14 4	895	198	14 6	802	10.11094	14 2	9.88906
15	120	15 4	880	9.91224	15 6	10.08776	104	15 3	896
16	136	16 4	864	250	16 7	750	114	16 3	886
17	151	17 4	849	276	17 7	724	125	17 3	875
18	166	18 5	834	301	18 8	699	135	18 3	865
19	9.80182	19 5	10.19818	327	19 8	673	145	19 3	855
20	197	20 5	803	353	20 9	647	156	20 3	844
21	213	21 5	787	379	21 9	621	166	21 4	834
22	228	22 6	772	404	22 9	596	176	22 4	824
23	244	23 6	756	430	23 10	570	10.11187	23 4	9.88813
24	259	24 6	741	456	24 10	544	197	24 4	803
25	274	25 6	726	9.91482	25 11	10.08518	207	25 4	793
26	290	26 7	710	507	26 11	493	218	26 5	782
27	305	27 7	695	533	27 12	467	228	27 5	772
28	320	28 7	680	559	28 12	441	239	28 5	761
29	336	29 7	664	585	29 12	415	249	29 5	751
30	9.80351	30 8	10.19649	610	30 13	390	259	30 5	741
31	366	31 8	634	636	31 13	364	270	31 5	730
32	382	32 8	618	662	32 14	338	10.11280	32 6	9.88720
33	397	33 8	603	688	33 14	312	291	33 6	709
34	412	34 9	588	713	34 15	287	301	34 6	699
35	428	35 9	572	9.91739	35 15	10.08261	312	35 6	688
36	443	36 9	557	765	36 15	235	322	36 6	678
37	458	37 9	542	791	37 16	209	332	37 6	668
38	473	38 10	527	816	38 16	184	343	38 7	657
39	489	39 10	511	842	39 17	158	353	39 7	647
40	9.80504	40 10	10.19496	868	40 17	132	364	40 7	636
41	519	41 10	481	893	41 18	107	10.11374	41 7	9.88626
42	534	42 11	466	919	42 18	081	385	42 7	615
43	550	43 11	450	945	43 18	055	395	43 7	605
44	565	44 11	435	971	44 19	029	406	44 8	594
45	580	45 12	420	9.91996	45 19	10.08004	416	45 8	584
46	595	46 12	405	9.92022	46 20	10.07978	427	46 8	573
47	610	47 12	390	048	47 20	952	437	47 8	563
48	625	48 12	375	073	48 21	927	448	48 8	552
49	641	49 13	359	099	49 21	901	458	49 9	542
50	9.80656	50 13	10.19344	125	50 21	875	10.11469	50 9	9.88531
51	671	51 13	329	150	51 22	850	479	51 9	521
52	686	52 13	314	176	52 22	824	490	52 9	510
53	701	53 14	299	9.92202	53 23	10.07798	501	53 9	499
54	716	54 14	284	227	54 23	773	511	54 9	489
55	731	55 14	269	253	55 24	747	522	55 10	478
56	746	56 14	254	279	56 24	721	532	56 10	468
57	762	57 15	238	304	57 24	696	543	57 10	457
58	777	58 15	223	330	58 25	670	553	58 10	447
59	792	59 15	208	356	59 25	644	564	59 10	436
60	9.80807	60 15	10.19193	9.92381	60 26	10.07619	10.11575	60 10	9.88425
↑ 129° →cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←50° ↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

40°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←139°
↓									↓
0	9. 80807	0 0	10. 19193	9. 92381	0 0	10. 07619	10. 11575	0 0	9. 88425
1	822	1 0	178	407	1 0	593	585	1 0	415
2	837	2 0	163	433	2 1	567	596	2 0	404
3	852	3 1	148	458	3 1	542	606	3 1	394
4	867	4 1	133	484	4 2	516	617	4 1	383
5	882	5 1	118	510	5 2	490	628	5 1	372
6	9. 80897	6 1	10. 19103	9. 92535	6 3	10. 07465	638	6 1	362
7	912	7 2	088	561	7 3	439	649	7 1	351
8	927	8 2	073	587	8 3	413	660	8 1	340
9	942	9 2	058	612	9 4	388	670	9 2	330
10	957	10 2	043	638	10 4	362	10. 11681	10 2	9. 88319
11	972	11 3	028	663	11 5	337	692	11 2	308
12	9. 80987	12 3	10. 19013	9. 92689	12 5	10. 07311	702	12 2	298
13	9. 81002	13 3	10. 18998	715	13 6	285	713	13 2	287
14	017	14 3	983	740	14 6	260	724	14 3	276
15	032	15 4	968	766	15 6	234	734	15 3	266
16	047	16 4	953	792	16 7	208	745	16 3	255
17	061	17 4	939	817	17 7	183	756	17 3	244
18	076	18 4	924	9. 92843	18 8	10. 07157	766	18 3	234
19	091	19 5	909	868	19 8	132	777	19 3	223
20	106	20 5	894	894	20 9	106	10. 11788	20 4	9. 88212
21	9. 81121	21 5	10. 18879	920	21 9	080	799	21 4	201
22	136	22 5	864	945	22 9	055	809	22 4	191
23	151	23 6	849	971	23 10	029	820	23 4	180
24	166	24 6	834	9. 92996	24 10	10. 07004	831	24 4	169
25	180	25 6	820	9. 93022	25 11	10. 06978	842	25 4	158
26	195	26 6	805	048	26 11	952	852	26 5	148
27	210	27 7	790	073	27 12	927	863	27 5	137
28	225	28 7	775	099	28 12	901	874	28 5	126
29	9. 81240	29 7	10. 18760	124	29 12	876	885	29 5	115
30	254	30 7	746	150	30 13	850	10. 11895	30 5	9. 88105
31	269	31 8	731	175	31 13	825	906	31 6	094
32	284	32 8	716	9. 93201	32 14	10. 06799	917	32 6	083
33	299	33 8	701	227	33 14	773	928	33 6	072
34	314	34 8	686	252	34 14	748	939	34 6	061
35	328	35 9	672	278	35 15	722	949	35 6	051
36	343	36 9	657	303	36 15	697	960	36 6	040
37	9. 81358	37 9	10. 18642	329	37 16	671	971	37 7	029
38	372	38 9	628	354	38 16	646	982	38 7	018
39	387	39 10	613	9. 93380	39 17	10. 06620	10. 11993	39 7	9. 88007
40	402	40 10	598	406	40 17	594	10. 12004	40 7	9. 87996
41	417	41 10	583	431	41 17	569	015	41 7	985
42	431	42 10	569	457	42 18	543	025	42 8	975
43	446	43 11	554	482	43 18	518	036	43 8	964
44	9. 81461	44 11	10. 18539	508	44 19	492	047	44 8	953
45	475	45 11	525	533	45 19	467	058	45 8	942
46	490	46 11	510	9. 93559	46 20	10. 06441	069	46 8	931
47	505	47 12	495	584	47 20	416	080	47 8	920
48	519	48 12	481	610	48 20	390	091	48 9	909
49	534	49 12	466	636	49 21	364	102	49 9	898
50	549	50 12	451	661	50 21	339	10. 12113	50 9	9. 87887
51	563	51 13	437	687	51 22	313	123	51 9	877
52	9. 81578	52 13	10. 18422	712	52 22	288	134	52 9	866
53	592	53 13	408	9. 93738	53 23	10. 06262	145	53 10	855
54	607	54 13	393	763	54 23	237	156	54 10	844
55	622	55 14	378	789	55 23	211	167	55 10	833
56	636	56 14	364	814	56 24	186	178	56 10	822
57	651	57 14	349	840	57 24	160	189	57 10	811
58	665	58 14	335	865	58 25	135	200	58 10	800
59	680	59 15	320	891	59 25	109	211	59 11	789
60	9. 81694	60 15	10. 18306	9. 93916	60 26	10. 06084	10. 12222	60 11	9. 87778
↑									↑
130°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←49°
↑									↑

ARMY AIR FORCES

Table X. Logarithms of Trigonometric Functions—Continued

41°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←138°
↓									↓
0	9. 81694	0 0	10. 18306	9. 93916	0 0	10. 06084	10. 12222	0 0	9. 87778
1	709	1 0	291	942	1 0	058	233	1 0	767
2	723	2 0	277	967	2 1	033	244	2 0	756
3	738	3 1	262	9. 93993	3 1	10. 06007	255	3 1	745
4	752	4 1	248	9. 94018	4 2	10. 05982	266	4 1	734
5	767	5 1	233	044	5 2	956	277	5 1	723
6	781	6 1	219	069	6 3	931	288	6 1	712
7	9. 81796	7 2	10. 18204	095	7 3	905	299	7 1	701
8	810	8 2	190	120	8 3	880	310	8 1	690
9	825	9 2	175	146	9 4	854	321	9 2	679
10	839	10 2	161	171	10 4	829	10. 12332	10 2	9. 87668
11	854	11 3	146	197	11 5	803	343	11 2	657
12	868	12 3	132	9. 94222	12 5	10. 05778	354	12 2	646
13	882	13 3	118	248	13 6	752	365	13 2	635
14	9. 81897	14 3	10. 18103	273	14 6	727	376	14 3	624
15	911	15 4	089	299	15 6	701	387	15 3	613
16	926	16 4	074	324	16 7	676	399	16 3	601
17	940	17 4	060	350	17 7	650	410	17 3	590
18	955	18 4	045	375	18 8	625	421	18 3	579
19	969	19 5	031	9. 94401	19 8	10. 05599	432	19 4	568
20	983	20 5	017	426	20 8	574	10. 12443	20 4	9. 87557
21	9. 81998	21 5	10. 18002	452	21 9	548	454	21 4	546
22	9. 82012	22 5	10. 17988	477	22 9	523	465	22 4	535
23	026	23 5	974	503	23 10	497	476	23 4	524
24	041	24 6	959	528	24 10	472	487	24 4	513
25	055	25 6	945	554	25 11	446	499	25 5	501
26	069	26 6	931	579	26 11	421	510	26 5	490
27	084	27 6	916	9. 94604	27 11	10. 05396	521	27 5	479
28	098	28 7	902	630	28 12	370	532	28 5	468
29	112	29 7	888	655	29 12	345	543	29 5	457
30	9. 82126	30 7	10. 17874	681	30 13	319	10. 12554	30 6	9. 87446
31	141	31 7	859	706	31 13	294	566	31 6	434
32	155	32 8	845	732	32 14	268	577	32 6	423
33	169	33 8	831	757	33 14	243	588	33 6	412
34	184	34 8	816	9. 94783	34 14	10. 05217	599	34 6	401
35	198	35 8	802	808	35 15	192	610	35 7	390
36	212	36 9	788	834	36 15	166	622	36 7	378
37	226	37 9	774	859	37 16	141	633	37 7	367
38	9. 82240	38 9	10. 17760	884	38 16	116	644	38 7	356
39	255	39 9	745	910	39 17	090	655	39 7	345
40	269	40 10	731	935	40 17	065	10. 12666	40 7	9. 87334
41	283	41 10	717	961	41 17	039	678	41 8	322
42	297	42 10	703	9. 94986	42 18	10. 05014	689	42 8	311
43	311	43 10	689	9. 95012	43 18	10. 04988	700	43 8	300
44	326	44 10	674	037	44 19	963	712	44 8	288
45	9. 82340	45 11	10. 17660	062	45 19	938	723	45 8	277
46	354	46 11	646	088	46 20	912	734	46 9	266
47	368	47 11	632	113	47 20	887	745	47 9	255
48	382	48 11	618	139	48 20	861	757	48 9	243
49	396	49 12	604	164	49 21	836	768	49 9	232
50	410	50 12	590	190	50 21	810	10. 12779	50 9	9. 87221
51	424	51 12	576	9. 95215	51 22	10. 04785	791	51 10	209
52	9. 82439	52 12	10. 17561	240	52 22	760	802	52 10	198
53	453	53 13	547	266	53 22	734	813	53 10	187
54	467	54 13	533	291	54 23	709	825	54 10	175
55	481	55 13	519	317	55 23	683	836	55 10	164
56	495	56 13	505	342	56 24	658	847	56 10	153
57	509	57 14	491	368	57 24	632	859	57 11	141
58	523	58 14	477	393	58 25	607	870	58 11	130
59	537	59 14	463	418	59 25	582	881	59 11	119
60	9. 82551	60 14	10. 17449	9. 95444	60 25	10. 04556	10. 12893	60 11	9. 87107
↑									↑
131°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←48°
↑									↑

AIR NAVIGATION TABLES

Table X. Logarithms of Trigonometric Functions—Continued

42°→	sin	" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←137°
↓									↓
0	9. 82551	0 0	10. 17449	9. 95444	0 0	10. 04556	10. 12893	0 0	9. 87107
1	565	1 0	435	469	1 0	531	904	1 0	096
2	579	2 0	421	495	2 1	505	915	2 0	085
3	593	3 1	407	520	3 1	480	927	3 1	073
4	607	4 1	393	545	4 2	455	938	4 1	062
5	621	5 1	379	571	5 2	429	950	5 1	050
6	635	6 1	365	596	6 3	404	961	6 1	039
7	9. 82649	7 2	10. 17351	9. 95622	7 3	10. 04378	972	7 1	028
8	663	8 2	337	647	8 3	353	984	8 2	016
9	677	9 2	323	672	9 4	328	10. 12995	9 2	9. 87005
10	691	10 2	309	698	10 4	302	10. 13007	10 2	9. 86993
11	705	11 3	295	723	11 5	277	018	11 2	982
12	719	12 3	281	748	12 5	252	030	12 2	970
13	9. 82733	13 3	10. 17267	9. 95799	13 5	226	041	13 3	959
14	747	14 3	253	9. 95799	14 6	10. 04201	053	14 3	947
15	761	15 3	239	825	15 6	175	064	15 3	936
16	775	16 4	225	850	16 7	150	076	16 3	924
17	788	17 4	212	875	17 7	125	087	17 3	913
18	802	18 4	198	901	18 8	099	098	18 3	902
19	9. 82816	19 4	10. 17184	926	19 8	074	110	19 4	890
20	830	20 5	170	952	20 8	048	10. 13121	20 4	9. 86879
21	844	21 5	156	9. 95977	21 9	10. 04023	133	21 4	867
22	858	22 5	142	9. 96002	22 9	10. 03998	145	22 4	855
23	872	23 5	128	028	23 10	972	156	23 4	844
24	885	24 6	115	053	24 10	947	168	24 5	832
25	9. 82899	25 6	10. 17101	078	25 11	922	179	25 5	821
26	913	26 6	087	104	26 11	896	191	26 5	809
27	927	27 6	073	129	27 11	871	202	27 5	798
28	941	28 6	059	155	28 12	845	214	28 5	786
29	955	29 7	045	180	29 12	820	225	29 6	775
30	968	30 7	032	205	30 13	795	10. 13237	30 6	9. 86763
31	982	31 7	018	231	31 13	769	248	31 6	752
32	9. 82996	32 7	10. 17004	9. 96256	32 14	10. 03744	260	32 6	740
33	9. 83010	33 8	10. 16990	281	33 14	719	272	33 6	728
34	023	34 8	977	307	34 14	693	283	34 7	717
35	037	35 8	963	332	35 15	668	295	35 7	705
36	051	36 8	949	357	36 15	643	306	36 7	694
37	065	37 8	935	383	37 16	617	318	37 7	682
38	078	38 9	922	408	38 16	592	330	38 7	670
39	092	39 9	908	433	39 16	567	341	39 8	659
40	9. 83106	40 9	10. 16894	459	40 17	541	10. 13353	40 8	9. 86647
41	120	41 9	880	484	41 17	516	365	41 8	635
42	133	42 10	867	9. 96510	42 18	10. 03490	376	42 8	624
43	147	43 10	853	535	43 18	465	388	43 8	612
44	161	44 10	839	560	44 19	440	400	44 8	600
45	174	45 10	826	586	45 19	414	411	45 9	589
46	188	46 11	812	611	46 19	389	423	46 9	577
47	9. 83202	47 11	10. 16798	636	47 20	364	435	47 9	565
48	215	48 11	785	662	48 20	338	446	48 9	554
49	229	49 11	771	687	49 21	313	458	49 9	542
50	242	50 11	758	712	50 21	288	10. 13470	50 10	9. 86530
51	256	51 12	744	9. 96738	51 22	10. 03262	482	51 10	518
52	270	52 12	730	763	52 22	237	493	52 10	507
53	9. 83283	53 12	10. 16717	788	53 22	212	505	53 10	495
54	297	54 12	703	814	54 23	186	517	54 10	483
55	310	55 13	690	839	55 23	161	528	55 11	472
56	324	56 13	676	864	56 24	136	540	56 11	460
57	338	57 13	662	890	57 24	110	552	57 11	448
58	351	58 13	649	915	58 25	085	564	58 11	436
59	365	59 14	635	940	59 25	060	575	59 11	425
60	9. 83378	60 14	10. 16622	9. 96966	60 25	10. 03034	10. 13587	60 12	9. 86413
↑									↑
132°→	cos	" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←47°
↑									↑

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Table X. Logarithms of Trigonometric Functions—Continued

43°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←136° ↓
0	9. 83378	0 0	10. 16622	9. 96966	0 0	10. 03034	10. 13587	0 0	9. 86413
1	392	1 0	608	9. 96991	1 0	10. 03009	599	1 0	401
2	405	2 0	595	9. 97016	2 1	10. 02984	611	2 0	389
3	419	3 1	581	042	3 1	958	623	3 1	377
4	432	4 1	568	067	4 2	933	634	4 1	366
5	446	5 1	554	092	5 2	908	646	5 1	354
6	459	6 1	541	118	6 3	882	658	6 1	342
7	473	7 2	527	143	7 3	857	670	7 1	330
8	9. 83486	8 2	10. 16514	168	8 3	832	682	8 2	318
9	500	9 2	500	9. 97193	9 4	10. 02807	10. 13694	9 2	9. 86306
10	513	10 2	487	219	10 4	781	705	10 2	295
11	527	11 2	473	244	11 5	756	717	11 2	283
12	540	12 3	460	269	12 5	731	729	12 2	271
13	554	13 3	446	295	13 5	705	741	13 3	259
14	567	14 3	433	320	14 6	680	753	14 3	247
15	9. 83581	15 3	10. 16419	345	15 6	655	765	15 3	235
16	594	16 4	406	9. 97371	16 7	10. 02629	777	16 3	223
17	608	17 4	392	396	17 7	604	10. 13789	17 3	9. 86211
18	621	18 4	379	421	18 8	579	800	18 4	200
19	634	19 4	366	447	19 8	553	812	19 4	188
20	648	20 4	352	472	20 8	528	824	20 4	176
21	661	21 5	339	497	21 9	503	836	21 4	164
22	674	22 5	326	523	22 9	477	848	22 4	152
23	9. 83688	23 5	10. 16312	548	23 10	452	860	23 5	140
24	701	24 5	299	9. 97573	24 10	10. 02427	872	24 5	128
25	715	25 6	285	598	25 11	402	10. 13884	25 5	9. 86116
26	728	26 6	272	624	26 11	376	896	26 5	104
27	741	27 6	259	649	27 11	351	908	27 5	092
28	755	28 6	245	674	28 12	326	920	28 6	080
29	768	29 6	232	700	29 12	300	932	29 6	068
30	9. 83781	30 7	10. 16219	725	30 13	275	944	30 6	056
31	795	31 7	205	750	31 13	250	956	31 6	044
32	808	32 7	192	9. 97776	32 13	10. 02224	968	32 6	032
33	821	33 7	179	801	33 14	199	980	33 7	020
34	834	34 8	166	826	34 14	174	10. 13992	34 7	9. 86008
35	848	35 8	152	851	35 15	149	10. 14004	35 7	9. 85996
36	861	36 8	139	877	36 15	123	016	36 7	984
37	874	37 8	126	902	37 16	098	028	37 7	972
38	9. 83887	38 8	10. 16113	927	38 16	073	040	38 8	960
39	901	39 9	099	953	39 16	047	052	39 8	948
40	914	40 9	086	9. 97978	40 17	10. 02022	064	40 8	936
41	927	41 9	073	9. 98003	41 17	10. 01997	076	41 8	924
42	940	42 9	060	029	42 18	971	088	42 8	912
43	954	43 10	046	054	43 18	946	10. 14100	43 9	9. 85900
44	967	44 10	033	079	44 19	921	112	44 9	888
45	980	45 10	020	104	45 19	896	124	45 9	876
46	9. 83993	46 10	10. 16007	130	46 19	870	136	46 9	864
47	9. 84006	47 10	10. 15994	155	47 20	845	149	47 9	851
48	020	48 11	980	9. 98180	48 20	10. 01820	161	48 10	839
49	033	49 11	967	206	49 21	794	173	49 10	827
50	046	50 11	954	231	50 21	769	185	50 10	815
51	059	51 11	941	256	51 22	744	197	51 10	803
52	072	52 12	928	281	52 22	719	10. 14209	52 10	9. 85791
53	9. 84085	53 12	10. 15915	307	53 22	693	221	53 11	779
54	098	54 12	902	9. 98332	54 23	10. 01668	234	54 11	766
55	112	55 12	888	357	55 23	643	246	55 11	754
56	125	56 12	875	383	56 24	617	258	56 11	742
57	138	57 13	862	408	57 24	592	270	57 11	730
58	151	58 13	849	433	58 24	567	282	58 12	718
59	164	59 13	836	458	59 25	542	294	59 12	706
60	9. 84177	60 13	10. 15823	9. 98484	60 25	10. 01516	10. 14307	60 12	9. 85693
↑ 133°→ cos		" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←46° ↑

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Table X. Logarithms of Trigonometric Functions—Continued

44°→ sin ↓		" Diff.	csc	tan	" Diff.	cot	sec	" Diff.	cos ←135° ↓	
0	9. 84177	0 0	10. 15823	9. 98484	0 0	10. 01516	10. 14307	0 0	9. 85693	
1	190	1 0	810	509	1 0	491	319	1 0	681	
2	203	2 0	797	534	2 1	466	331	2 0	669	
3	216	3 1	784	560	3 1	440	343	3 1	657	
4	229	4 1	771	585	4 2	415	355	4 1	645	
5	242	5 1	758	610	5 2	390	368	5 1	632	
6	255	6 1	745	635	6 3	365	380	6 1	620	
7	269	7 2	731	661	7 3	339	392	7 1	608	
8	282	8 2	718	686	8 3	314	404	8 2	596	
9	295	9 2	705	711	9 4	289	10. 14417	9 2	9. 85583	
10	9. 84308	10 2	10. 15692	9. 98737	10 4	10. 01263	429	10 2	571	
11	321	11 2	679	762	11 5	238	441	11 2	559	
12	334	12 3	666	787	12 5	213	453	12 2	547	
13	347	13 3	653	812	13 5	188	466	13 3	534	
14	360	14 3	640	838	14 6	162	478	14 3	522	
15	373	15 3	627	863	15 6	137	490	15 3	510	
16	385	16 3	615	888	16 7	112	503	16 3	497	
17	398	17 4	602	913	17 7	087	515	17 4	485	
18	411	18 4	589	939	18 8	061	10. 14527	18 4	9. 85473	
19	424	19 4	576	964	19 8	036	540	19 4	460	
20	9. 84437	20 4	10. 15563	9. 98989	20 8	10. 01011	552	20 4	448	
21	450	21 5	550	9. 99015	21 9	10. 00985	564	21 4	436	
22	463	22 5	537	040	22 9	960	577	22 5	423	
23	476	23 5	524	065	23 10	935	589	23 5	411	
24	489	24 5	511	090	24 10	910	601	24 5	399	
25	502	25 5	498	116	25 11	884	10. 14614	25 5	9. 85386	
26	515	26 6	485	141	26 11	859	626	26 5	374	
27	528	27 6	472	166	27 11	834	639	27 6	361	
28	540	28 6	460	191	28 12	809	651	28 6	349	
29	553	29 6	447	217	29 12	783	663	29 6	337	
30	9. 84566	30 6	10. 15434	9. 99242	30 13	10. 00758	676	30 6	324	
31	579	31 7	421	267	31 13	733	10. 14688	31 6	9. 85312	
32	592	32 7	408	293	32 13	707	701	32 7	299	
33	605	33 7	395	318	33 14	682	713	33 7	287	
34	618	34 7	382	343	34 14	657	726	34 7	274	
35	630	35 8	370	368	35 15	632	738	35 7	262	
36	643	36 8	357	394	36 15	606	750	36 7	250	
37	656	37 8	344	419	37 16	581	10. 14763	37 8	9. 85237	
38	669	38 8	331	444	38 16	556	775	38 8	225	
39	682	39 8	318	469	39 16	531	788	39 8	212	
40	9. 84694	40 9	10. 15306	9. 99495	40 17	10. 00505	800	40 8	200	
41	707	41 9	293	520	41 17	480	813	41 8	187	
42	720	42 9	280	545	42 18	455	825	42 9	175	
43	733	43 9	267	570	43 18	430	838	43 9	162	
44	745	44 9	255	596	44 19	404	850	44 9	150	
45	758	45 10	242	621	45 19	379	863	45 9	137	
46	771	46 10	229	646	46 19	354	10. 14875	46 10	9. 85125	
47	784	47 10	216	672	47 20	328	888	47 10	112	
48	796	48 10	204	697	48 20	303	900	48 10	100	
49	809	49 11	191	722	49 21	278	913	49 10	087	
50	9. 84822	50 11	10. 15178	9. 99747	50 21	10. 00253	926	50 10	074	
51	835	51 11	165	773	51 21	227	938	51 11	062	
52	847	52 11	153	798	52 22	202	951	52 11	049	
53	860	53 11	140	823	53 22	177	963	53 11	037	
54	873	54 12	127	848	54 23	152	976	54 11	024	
55	885	55 12	115	874	55 23	126	10. 14988	55 11	9. 85012	
56	898	56 12	102	899	56 24	101	10. 15001	56 12	9. 84999	
57	911	57 12	089	924	57 24	076	014	57 12	986	
58	923	58 12	077	949	58 24	051	026	58 12	974	
59	936	59 13	064	9. 99975	59 25	025	039	59 12	961	
60	9. 84949	60 13	10. 15051	10. 00000	60 25	10. 00000	10. 15051	60 12	9. 84949	
↑ 134°→ cos			" Diff.	sec	cot	" Diff.	tan	csc	" Diff.	sin ←45° ↑

Table XI. RADIO BEARING CONVERSION

This table is used to convert the radio or true bearing into the mercator bearing, when it is desired to plot the bearing on a mercator chart. The arguments used to find the correction are the middle latitude between the sending radio station and the vessel's D. R. position, and the difference of longitude between the radio station and the vessel. The sign of the correction is as follows,

In north latitude, when the vessel is $\frac{\text{eastward}}{\text{westward}}$ of the station, the correction is $\frac{\text{additive}}{\text{subtractive}}$.
 In south latitude, when the vessel is $\frac{\text{eastward}}{\text{westward}}$ of the station, the correction is $\frac{\text{subtractive}}{\text{additive}}$.

Should the bearing be observed from the vessel, the sign of the correction as given above is reversed.

Example. A vessel in D. R. Lat. $38^{\circ}03' N.$; Long. $55^{\circ} W.$; receives a radio bearing of 118° from Bar Harbor, Maine, radio station (Lat. $44^{\circ}19' N.$; Long. $68^{\circ}11' W.$). Find the Mercator bearing.

Bar Harbor station, Lat., $44^{\circ}19' N.$; Long. $68^{\circ}11' W.$

Vessel (D. R. position), Lat. $38^{\circ}03' N.$; Long. $55^{\circ}00' W.$

Middle Lat. $41^{\circ}11' N.$; Diff. Long. $13^{\circ}11' W.$

Enter table with Mid. Lat. 41° and Diff. Long. $13^{\circ}.2$; the correction is $+4^{\circ}.4$.

Mercator bearing = Radio bearing plus correction, or $118^{\circ} + 4^{\circ}.4 = 122^{\circ}.4$.

The table is computed from the formula, $\tan \text{ correction} = \frac{\sin \text{ Mid. Lat.}}{\cos \frac{\text{Diff. Lat.}}{2}} \tan \frac{\text{Diff. Long.}}{2}$

AIR NAVIGATION TABLES

Table XI. RADIO BEARING CONVERSION

Correction to be applied to radio bearing to convert to mercator bearing.

Difference of longitude

Mid. lat.	1°	1.5°	2°	2.5°	3°	3.5°	4°	4.5°	5°	5.5°	6°	6.5°	7°	7.5°	8°	8.5°	Mid. lat.
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	4
5	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	5
6	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	6
7	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	7
8	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	8
9	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	9
10	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	10
11	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	11
12	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	12
13	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	13
14	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	14
15	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	15
16	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	16
17	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	17
18	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	18
19	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	19
20	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	20
21	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	21
22	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	22
23	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	23
24	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	24
25	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	25
26	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	26
27	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	27
28	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	28
29	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	29
30	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	30
31	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	31
32	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	32
33	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	33
34	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	34
35	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	35
36	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	36
37	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	37
38	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	38
39	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	39
40	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	40
41	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	41
42	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	42
43	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	43
44	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	44
45	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	45
46	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	46
47	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	47
48	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	48
49	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	49
50	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	50
51	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	51
52	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	52
53	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	53
54	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	54
55	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	55
56	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	56
57	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	57
58	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	58
59	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	59
60	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2	.3	.3	.3	60

In north latitude when vessel is $\frac{\text{eastward}}{\text{westward}}$ of station, the correction is $\frac{+}{-}$.

NOTE.—Table XI, Radio Bearing Conversion, was taken from Hydrographic Office publication No. 9, Part II.

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Table XI. Radio Bearing Conversion—Continued
Correction to be applied to radio bearing to convert to mercator bearing.

Difference of longitude

Mid. lat.	9°	9.5°	10°	10.5°	11°	11.5°	12°	12.5°	13°	13.5°	14°	14.5°	15°	15.5°	16°	16.5°	Mid. lat.
°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	4
5	.4	.4	.4	.5	.5	.5	.5	.5	.6	.6	.6	.6	.7	.7	.7	.7	5
6	.5	.5	.5	.6	.6	.6	.6	.6	.7	.7	.7	.8	.8	.8	.8	.9	6
7	.6	.6	.6	.6	.7	.7	.7	.8	.8	.8	.9	.9	.9	1.0	1.0	1.0	7
8	.6	.7	.7	.7	.7	.8	.8	.9	.9	.9	1.0	1.0	1.1	1.1	1.1	1.2	8
9	.7	.8	.8	.8	.9	.9	.9	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3	9
10	.8	.8	.9	.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	10
11	.8	.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.5	1.5	1.5	1.6	11
12	.9	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	12
13	1.0	1.1	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8	1.9	13
14	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8	1.9	2.0	2.0	14
15	1.2	1.2	1.3	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.2	15
16	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.2	2.3	16
17	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.4	17
18	1.4	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	18
19	1.5	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.7	19
20	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.8	20
21	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	21
22	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	22
23	1.8	1.8	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.3	23
24	1.8	1.9	2.0	2.2	2.3	2.4	2.4	2.6	2.7	2.8	2.8	3.0	3.1	3.2	3.3	3.4	24
25	1.9	2.0	2.1	2.2	2.4	2.5	2.5	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	25
26	2.0	2.1	2.2	2.3	2.4	2.6	2.6	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	26
27	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.3	3.4	3.5	3.7	3.8	27
28	2.1	2.2	2.4	2.5	2.6	2.7	2.9	2.9	3.1	3.2	3.3	3.4	3.5	3.7	3.8	3.9	28
29	2.2	2.3	2.4	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.5	3.6	3.7	3.8	3.9	4.0	29
30	2.2	2.4	2.5	2.7	2.8	2.9	3.0	3.1	3.3	3.4	3.5	3.6	3.8	3.9	4.0	4.1	30
31	2.3	2.5	2.6	2.7	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.8	3.9	4.0	4.1	4.3	31
32	2.4	2.5	2.6	2.8	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.8	4.0	4.1	4.3	4.4	32
33	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.4	3.6	3.7	3.8	3.9	4.1	4.2	4.4	4.5	33
34	2.5	2.6	2.8	3.0	3.1	3.3	3.4	3.5	3.6	3.8	3.9	4.1	4.2	4.4	4.5	4.6	34
35	2.6	2.7	2.9	3.1	3.2	3.3	3.4	3.6	3.7	3.9	4.0	4.2	4.3	4.5	4.6	4.8	35
36	2.6	2.8	2.9	3.1	3.3	3.4	3.5	3.7	3.8	4.0	4.1	4.3	4.4	4.6	4.7	4.9	36
37	2.7	2.9	3.0	3.2	3.4	3.5	3.6	3.8	3.9	4.1	4.2	4.4	4.5	4.7	4.8	5.0	37
38	2.8	2.9	3.1	3.3	3.4	3.6	3.7	3.8	4.0	4.2	4.3	4.5	4.6	4.8	4.9	5.1	38
39	2.8	3.0	3.2	3.3	3.5	3.7	3.8	4.0	4.1	4.3	4.4	4.6	4.7	4.9	5.1	5.2	39
40	2.9	3.1	3.2	3.4	3.6	3.8	3.9	4.0	4.2	4.4	4.5	4.7	4.8	5.0	5.2	5.3	40
41	3.0	3.1	3.3	3.5	3.6	3.8	3.9	4.1	4.3	4.5	4.6	4.8	4.9	5.1	5.3	5.4	41
42	3.0	3.2	3.4	3.6	3.7	3.9	4.0	4.2	4.4	4.5	4.7	4.9	5.0	5.2	5.4	5.5	42
43	3.1	3.2	3.4	3.6	3.8	4.0	4.1	4.3	4.5	4.6	4.8	5.0	5.1	5.3	5.5	5.7	43
44	3.1	3.3	3.5	3.7	3.9	4.0	4.2	4.3	4.5	4.7	4.9	5.1	5.2	5.4	5.6	5.8	44
45	3.2	3.4	3.5	3.7	3.9	4.1	4.3	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.7	5.9	45
46	3.2	3.4	3.6	3.8	4.0	4.2	4.3	4.5	4.7	4.9	5.1	5.2	5.4	5.6	5.8	6.0	46
47	3.3	3.5	3.7	3.9	4.1	4.2	4.4	4.6	4.8	4.9	5.1	5.3	5.5	5.7	5.9	6.1	47
48	3.4	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	48
49	3.4	3.6	3.8	4.0	4.2	4.4	4.5	4.7	4.9	5.2	5.3	5.5	5.7	5.9	6.1	6.3	49
50	3.4	3.6	3.8	4.1	4.2	4.5	4.6	4.8	5.0	5.2	5.4	5.6	5.8	5.9	6.1	6.3	50
51	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.8	6.0	6.2	6.4	51
52	3.6	3.8	4.0	4.2	4.4	4.6	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	52
53	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	53
54	3.6	3.8	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	54
55	3.7	3.9	4.1	4.4	4.6	4.8	4.9	5.1	5.3	5.5	5.7	6.0	6.2	6.4	6.6	6.8	55
56	3.7	3.9	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	56
57	3.8	4.0	4.2	4.5	4.7	4.9	5.0	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	57
58	3.8	4.0	4.2	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.2	6.4	6.6	6.8	7.0	58
59	3.8	4.1	4.3	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.3	6.4	6.7	6.9	7.1	59
60	3.9	4.1	4.3	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.1	6.3	6.5	6.7	6.9	7.2	60

In south latitude when the vessel is $\frac{\text{eastward}}{\text{westward}}$ of station the correction is $\frac{-}{+}$.

AIR NAVIGATION TABLES

Table XII. OFF-COURSE CORRECTION TABLES

This table will find application when the navigator finds himself off-course by means of a fix, where the fix and the destination lie on different charts, making it difficult to draw in a new course.

The off-course correction table is based on the assumption that a change in heading produces the same change in track. This assumption is mathematically incorrect because any change in heading results in a change in the drift effect of the wind. However, when only small corrections to heading are made, the assumption may be considered as substantially correct.

Example.—The navigator of an airplane flying a true heading of 90° obtains a fix. The fix is 80 miles from the point of departure and 6 miles to the right of the desired course. What is the correction to parallel the course? What is the total correction necessary to converge on his destination which lies 100 nautical miles?

Solution.—Find intersection of 6 miles off-course column with 80-miles flown line. The correction to parallel the course is 4° . Since the airplane is to the right of the desired course the correction is negative. Now, find the intersection of same column with the 100-mile line. The additional correction to converge on the destination is 3° also negative. The total correction is therefore -7° .

NOTE.—Table XII, Off-course correction tables, was taken from Randolph Field publication, Tables of Air Navigation.

Table XII.—Off-course correction tables

Miles flown	Miles off course															
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50
	Compass correction to parallel track course															
10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
20	6	12	17	24	30	37	44	53	64	90	•	•	•	•	•	•
30	3	6	9	12	14	17	20	24	27	30	49	90	•	•	•	•
40	2	4	6	8	10	12	14	15	17	19	30	42	56	90	•	•
50	1	3	4	6	7	9	10	12	13	14	22	30	39	49	90	•
60	1	2	3	5	6	7	8	9	10	12	17	24	30	37	53	90
70	1	2	3	4	5	6	7	8	9	10	14	19	25	30	42	56
80	1	1	2	3	4	4	5	6	6	7	12	17	21	25	35	46
90	1	1	2	3	3	4	4	5	6	6	11	14	18	22	30	39
100	1	1	2	2	3	3	4	5	5	6	10	13	16	19	26	34
110	1	1	2	2	3	3	4	4	5	6	9	12	14	17	24	30
120	0	1	1	2	2	3	3	4	4	5	8	10	13	16	21	27
130	0	1	1	2	2	3	3	4	4	4	7	9	11	13	18	23
140	0	1	1	2	2	2	3	3	4	4	6	8	10	12	17	21
150	0	1	1	2	2	2	3	3	3	4	6	8	10	12	15	19
160	0	1	1	1	2	2	3	3	3	4	5	7	9	11	14	18
170	0	1	1	1	2	2	2	3	3	3	5	7	8	10	14	17
180	0	1	1	1	2	2	2	3	3	3	5	6	8	10	13	16
190	0	1	1	1	2	2	2	2	3	3	5	6	8	9	12	15
200	0	1	1	1	1	2	2	2	3	3	4	6	7	9	12	14

ARMY AIR FORCES

Table XIII. FORMS FOR SOLUTION OF MERCATOR AND MIDLATITUDE FLYING

MERCATOR FLYING (A. C. FORM No. 21-G)

Lat _____ N S Mer Pts. _____ Long _____ E W
 Lat _____ N S Mer Pts. _____ Long _____ E W
 () ()
 DL() N S Mer DL. _____ DLo() E W
 DLo _____ log _____
 Mer DL _____ log _____ minus
 Course NS E W log tan log sec
 DL log _____ plus
 Dist. _____ log
 Course. _____

MIDLATITUDE FLYING (A. C. FORM No. 21-H)

Lat _____ N S Long _____ E W
 Lat _____ N S Long _____ E W
 () ()
 DL() N S DLo() E W
 2) _____
 Mid Lat _____ N S
 DLo _____
 Mid Lat _____ Log _____
 Dep _____ Log _____
 DL _____ Log _____ minus
 Course N S EW Log Sin Log Tan
 _____ minus
 Dist. _____ Log
 Course. _____

Table XIV. TABLE OF CORRECTION FOR ERROR IN INDICATED FREE-AIR TEMPERATURE DUE TO COMPRESSION HEAT

True air-speed (mph)	Correction (degrees centigrade)	True air-speed (mph)	Correction (degrees centigrade)
80	-0.5	300	-7.2
100	-0.8	320	-8.2
120	-1.1	340	-9.2
140	-1.6	360	-10.4
160	-2.0	380	-11.6
180	-2.6	400	-12.8
200	-3.2	420	-14.1
220	-3.9	440	-15.5
240	-4.6	460	-16.9
260	-5.4	480	-18.4
280	-6.3	500	-20.0

AIR NAVIGATION TABLES

Table XV. CONVERSION TABLES FOR METRIC AND ENGLISH LINEAR MEASURE

Metric to English.

Meters.	Feet.	Yards.	Statute miles.	Nautical miles.
1	3.280 833 3	1.093 611 1	0.000 621 370	0.000 539 593
2	6.561 666 7	2.187 222 2	.001 242 740	.001 079 185
3	9.842 500 0	3.280 833 3	.001 864 110	.001 618 778
4	13.123 333 3	4.374 444 4	.002 485 480	.002 158 370
5	16.404 166 7	5.468 055 6	.003 106 850	.002 697 963
6	19.685 000 0	6.561 666 7	.003 728 220	.003 237 556
7	22.965 833 3	7.655 277 8	.004 349 590	.003 777 148
8	26.246 666 7	8.748 888 9	.004 970 960	.004 316 741
9	29.527 500 0	9.842 500 0	.005 592 330	.004 856 333

English to metric.

No.	Feet to meters.	Yards to meters.	Statute miles to meters.	Nautical miles to meters.
1	0.304 800 6	0.914 401 8	1,609.35	1,853.25
2	0.609 601 2	1.828 803 7	3,218.69	3,706.50
3	0.914 401 8	2.743 205 5	4,828.04	5,559.75
4	1.219 202 4	3.657 607 3	6,437.39	7,413.00
5	1.524 003 0	4.572 009 1	8,046.74	9,266.25
6	1.828 803 7	5.486 411 0	9,656.08	11,119.50
7	2.133 604 3	6.400 812 8	11,265.43	12,972.75
8	2.438 404 9	7.315 214 6	12,874.78	14,826.00
9	2.743 205 5	8.229 616 5	14,484.13	16,679.25

Milli-meters.	Inches
1	0.03937
2	.07874
3	.11811
4	.15748
5	.19685
6	.23622
7	.27559
8	.31496
9	.35433

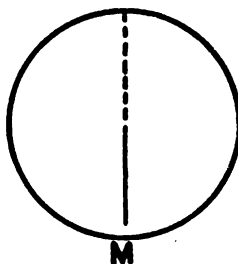
Statute miles.	Kilometers
1	1.60935
2	3.21869
3	4.82804
4	6.43739
5	8.04674
6	9.65608
7	11.26543
8	12.87478
9	14.48413

Inches.	Centimeters.	Meters
1	2.54001	0.02540
2	5.08002	.05080
3	7.62003	.07620
4	10.16004	.10160
5	12.70005	.12700
6	15.24006	.15240
7	17.78007	.17780
8	20.32008	.20320
9	22.86009	.22860

NOTE.—Table XV, Conversion Tables for Metric and English Measure, was taken from Hydrographic Office Publication No. 9: Part II.

WAR DEPARTMENT
A. A. F.
FORM NO. 21 D
Revised May 14, 1942

LINE OF POSITION



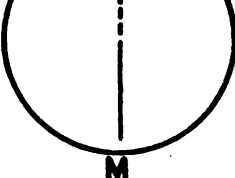
AGETON SOLUTION					Hs		OBS. ALT.	SUN OR STAR
GCT					CORR		0	
GHA (ARC)					Ho		6	- 8
							7	7
							8	6
							9	6
							10	5
→ LONG (DR)		ADD	SUBTRACT		ADD	AZIMUTH SUBTRACT	11	- 5
							12	5
							13	4
							14	4
							15	3
LHA (ARC)		A					16	- 3
							17	3
DEC.		B	A				18	3
							19	3
							20	3
R		A	B		B	A	22	2
							24	- 2
							26	2
							28	2
							30	2
K			A				32	2
							34	- 2
→ LAT. (DR)							36	1
							38	1
							40	1
K ~ L					B		48	1
							50	1
							55	- 1
							60	1
Hc					A	B	78	- 1
							75	0
							80	0
							85	0
							90	0
Ho						A		
a		TOWARD AWAY			ZN	Z		

Figure 1. Ageton solution, line of position.

AIR NAVIGATION TABLES

A. A. F. Form No. 21 Q
(Revised May 14, 1942)

GREAT CIRCLE COMPUTATION AGETON SOLUTION (Course and Distance)

A L_a		Lo			
B L_a		Lo			
t					
		ADD	SUBTRACT	ADD	SUBTRACT
t		A			
L'		B	A		
R		A	B	B	A
K			A		
L					
K ^N L				B	
D				B	A
C					A
La and Lo Vertex					
		ADD	SUBTRACT	ADD	
L		B		B	
C		A	B		
L _v		B	A		
tv			A	A	
λ		D _v			A
λ^v					

U. S. GOVERNMENT PRINTING OFFICE : 1943 16--20376-2

Figure 2.

ARMY AIR FORCES

WAR DEPARTMENT
A. A. F. FORM NO. 21R
(Revised May 14, 1942)

GREAT CIRCLE COMPUTATION AGETON SOLUTION

(Lat Lo of Intermediate Point —x-1, x-2, etc.)

	1	2	3	4	5	6
dv						
dx						
dv-x						
Lv A						
ADD						
dv-x B						
Lx A						
Lx						
dv-x A						
SUB						
Lx B						
tv-x A						
tv-x						
Long v						

Long x

(2-42) 16-20279-4 ☆ U. S. GOVERNMENT PRINTING OFFICE : 1945

Figure 3.

AIR NAVIGATION TABLES

WAR DEPARTMENT
AAF Form No. 21 U
Revised 3-19-43

FACTORS FOR GROUND SPEED BY TIMING

$$\frac{\text{NAUTICAL MILES}}{\text{HOUR}} = \frac{\text{ALTITUDE (FEET)}}{\text{TIME (SECONDS)}} \times \text{FACTOR}$$

START FINISH	*0°	10°	20°	30°	40°	50°
5°	.0518					
10°	.1043					
15°	.1587	.0543				
20°	.2155	.1112				
25°	.2761	.1717	.0605			
30°	.3419	.2375	.1264			
35°	.4146	.3102	.1990	.0727		
40°	.4968	.3924	.2813	.1549		
45°	.5921	.4877	.3765	.2502	.0953	
*50°	.7057	.6013	.4901	.3638	.2089	
55°	.8456	.7412	.6300	.5037	.3487	.140
60°	1.026	.9222	.8100	.6837	.5287	.320
65°	1.270	1.165	1.054	.9275	.7729	.564
*70.9°	1.706	1.602	1.490	1.364	1.209	1.000

* B-3 Driftmeter has detents at these angles.

Figure 4.

